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A grammar of Jalonke argument structure

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A grammar of Jalonke argument structure

Een wetenschappelijke proeve
Op het gebied van Letteren

Proefschrift

Ter verkrijging van de graad van doctor aan de Radboud Universiteit Nijmegen
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TABLE OF CONTENTS

Acknowledgments.....	i
Table of contents.....	v
Abbreviations and conventions.....	xiii

1 Introduction

1.1. Motivation for the study.....	1
1.2. Research questions.....	5
1.3. Preview of analysis	6
1.4. Value of the Jalonke data.....	9
1.5. Structure of the thesis.....	10
1.6. The language and its speakers.....	11
1.6.1. Language names and geographical distribution.....	11
1.6.2. The genetic affiliation of Yalunka	13
1.6.3. Previous research on Yalunka and Soso	14
1.6.4. The fieldsite	15
1.6.5. History.....	16
1.6.6. Contact situation, ethnic and linguistic identity.....	17
1.6.7. Way of life	19
1.6.8. Social organization.....	20
1.6.9. Literacy, scripts and possibilities of language revival	22
1.7. Theoretical framework.....	23
1.7.1. What's in a verb?	23
1.7.2. Levels of information.....	28
1.7.2.1. Lexical aspect.....	28
1.7.2.2. Event structure	33
1.7.2.2.1. Verbs denoting externally vs. internally caused events	37
1.7.2.2.2. Verbs denoting uncaused events	39
1.7.2.2.3. Likelihood of an event to be construed as uncaused.....	43
1.7.2.2.4. Summary event structure.....	45
1.7.2.3. Participant structure	47
1.7.2.4. Argument structure	48
1.7.2.5. Semantic frames.....	52
1.7.3. Summary: the levels of information taken together.....	54
1.8. Methodology.....	57
1.8.1. Fieldwork setting	57
1.8.2. Contributors	58
1.8.3. Kinds of data	59
1.8.4. Tests employed for verbs.....	64

1.8.4.1.	The default aspect test.....	64
1.8.4.2.	The dynamicity test.....	65
1.8.4.3.	The realization-under-cesssation test.....	66
1.8.4.4.	The duration-completion test.....	67
1.8.4.5.	The degree-of-change test.....	69
1.8.4.6.	The punctuality-durativity test.....	70
1.8.4.7.	The control test	70
1.8.4.8.	The passive test.....	71
1.8.4.9.	Summary of tests and the distinctions they diagnose	71
1.9.	Summary	73
2	A basic grammar of Jalonke	
2.1.	Introduction.....	75
2.2.	Some typological characteristics.....	75
2.2.1.	Typological profile.....	75
2.2.2.	Constituent order.....	76
2.2.3.	The argument-adjunct distinction	79
2.3.	Phonology	81
2.3.1.	Phoneme inventory	82
2.3.1.1.	Vowels	82
2.3.1.2.	Consonants.....	82
2.3.1.3.	Orthographic conventions.....	83
2.3.2.	Syllable structure	84
2.3.3.	Tone	84
2.3.4.	Morphophonological processes	88
2.3.4.1.	Progressive nasal assimilation	88
2.3.4.2.	Progressive <i>a</i> -assimilation	88
2.3.4.3.	Regressive complete vowel assimilation	88
2.3.4.4.	Flap deletion.....	89
2.3.4.5.	Intervocalic nasal elisions	89
2.3.4.6.	<i>L</i> -gemination.....	92
2.4.	Major word classes distinguished	93
2.4.1.	Noun/verb distinction.....	93
2.4.2.	Lack of adjectives	97
2.5.	Adverbs	97
2.5.1.	Adverbs of time.....	97
2.5.2.	Demonstrative adverbs.....	98
2.5.3.	Adverbs of manner.....	99
2.6.	Nominals	100
2.6.1.	The noun phrase.....	100
2.6.2.	Possessive constructions	102
2.6.2.1.	Nouns entering the inalienable possessive construction	103
2.6.2.2.	Nouns entering the alienable possessive construction	105
2.6.3.	Nominal subclasses.....	106
2.6.3.1.	Pronouns	106
2.6.3.2.	Quantifiers.....	107
2.6.3.3.	Numerals	107
2.6.3.4.	Demonstrative pronouns	108
2.6.4.	Nominal inflection	109
2.6.4.1.	The definite marker <i>-na</i>	109
2.6.4.2.	Number	110

2.6.5.	Nominal derivation	111
2.6.5.1.	The diminutive <i>-dii</i>	111
2.6.5.2.	The abstract suffix <i>-naa</i>	111
2.6.5.3.	The habitative <i>-xie</i>	112
2.6.5.4.	The privative suffix <i>-tare</i>	112
2.6.5.5.	The privative abstract suffix <i>-taranaa</i>	114
2.7.	Postpositions	114
2.8.	Verbals	117
2.8.1.	The verb phrase	117
2.8.2.	Tense, aspect, and modality	118
2.8.2.1.	Tense	119
2.8.2.1.1.	Zero-marked	119
2.8.2.1.2.	The past marker <i>nun</i>	119
2.8.2.2.	Aspect	120
2.8.2.2.1.	Zero-marked	120
2.8.2.2.2.	The inactuality marker <i>nde</i>	120
2.8.2.2.3.	The imperfective marker <i>-ma</i>	122
2.8.2.2.4.	The perfect markers <i>-xi</i> and <i>banta</i>	123
2.8.2.2.5.	The prospective <i>-fee</i>	124
2.8.2.3.	Modality	124
2.8.2.3.1.	Zero-marked	124
2.8.2.3.2.	The subjunctive	124
2.8.3.	Verbal derivation	125
2.8.3.1.	The causative prefix <i>ra-</i>	125
2.8.3.2.	The distributive prefix <i>ma-</i>	126
2.8.3.3.	The iterative prefix <i>i-</i>	127
2.8.3.4.	Nominalization	127
2.9.	Clause, predication and sentence types	131
2.9.1.	Relative clauses	131
2.9.2.	Verbless predications	132
2.9.1.1.	Class inclusion and equation	132
2.9.1.2.	Location	133
2.9.1.3.	Existence	134
2.9.1.4.	Predicative possession	134
2.9.2.	Sentence types	135
2.9.2.1.	Zero-marked	135
2.9.2.2.	Interrogative sentences	135
2.9.2.3.	Imperative sentences	137
2.10.	Summary	137
3	Lexical argument structure - intransitive verbs	
3.1.	Introduction	139
3.2.	Intransitive verbs as denoting internally caused or uncaused eventualities	141
3.3.	Intransitive manner verbs	145
3.3.1.	Members of the class of intransitive manner verbs	145
3.3.2.	Further remarks on intransitive manner verbs	147
3.3.3.	Event structure and lexical aspect of intransitive manner verbs	147
3.3.4.	Participant structure of intransitive manner verbs	151
3.4.	Intransitive result verbs	152
3.4.1.	Members of the class of intransitive result verbs	152
3.4.2.	Event structure and lexical aspect of intransitive result verbs	154

3.4.3.	Participant structure of intransitive result verbs	156
3.5.	Intransitive stative verbs	157
3.5.1.	Members of the class of intransitive stative verbs	157
3.5.2.	Event structure and lexical aspect of intransitive stative verbs	158
3.5.3.	The stage-level vs. individual-level distinction	163
3.5.4.	Participant structure of intransitive stative verbs	165
3.6.	Summary	167
4	Lexical argument structure - transitive verbs	
4.1.	Introduction	169
4.2.	Transitive verbs as denoting externally caused eventualities	170
4.3.	Transitive manner verbs	172
4.3.1.	Members of the class of transitive manner verbs	172
4.3.2.	Event structure and lexical aspect of transitive manner verbs	173
4.3.3.	Participant structure of transitive manner verbs	177
4.4.	Transitive manner-with-result verbs	179
4.4.1.	Members of the class of transitive manner-with-result verbs	179
4.4.2.	Further remarks on transitive manner-with-result verbs	183
4.4.3.	Event structure and lexical aspect of manner-with-result verbs	184
4.4.4.	Participant structure of manner-with-result verbs	185
4.5.	Transitive result verbs	189
4.5.1.	Members of the class of transitive result verbs	191
4.5.2.	Event structure and lexical aspect of transitive result verbs	192
4.5.3.	Participant structure of transitive result verbs	194
4.6.	Transitive verbs with optionally three participants	195
4.6.1.	The adjunct character of the third participant of transitive verbs with optionally three participants	196
4.6.2.	Frame-semantic roles and linking differences for transitive verbs with optionally three participants	198
4.6.3.	Cross-linguistic variation and patterns attested in Jalonke for the linking of participants	200
4.6.4.	Postpositions marking the third participant of transitive verbs with optionally three participants	204
4.6.5.	Participant structure of transitive verbs with optionally three participants	212
4.6.5.1.	‘Theme-Source/Goal strategy’-only verbs	212
4.6.5.2.	‘Source/Goal-Theme strategy’-only verbs	216
4.6.5.3.	‘Theme-Instrument strategy’-only verbs	217
4.6.5.4.	Alternations	218
4.7.	Summary	222
5	Lexical argument structure - causative/inchoative alternating verbs	
5.1.	Introduction	225
5.2.	Causative/inchoative alternating verbs as denoting externally caused and uncaused events	226
5.3.	Causative/inchoative alternating result verbs with stative readings	231
5.3.1.	Members of the class of causative/inchoative alternating result verbs with stative readings	231
5.3.2.	Event structure and lexical aspect of causative/inchoative alternating result verbs with stative readings	231
5.3.3.	Participant structure of causative/inchoative alternating result verbs with stative readings	236

5.4. Causative/inchoative alternating result verbs	237
5.4.1. Members of the class of causative/inchoative alternating result verbs	237
5.4.2. Event structure and lexical aspect of causative/inchoative alternating result verbs	238
5.4.3. Participant structure of causative/inchoative alternating result verbs	240
5.5. Summary	246
6 Lexical argument structure - reflexive-only verbs	
6.1. Introduction	247
6.2. Reflexive-only verbs as denoting controlled eventualities	248
6.2.1. Reflexive uses of transitive verbs	248
6.2.2. Syntactic and semantic properties of reflexive-only verbs	250
6.3. Participant structure of reflexive-only verbs	257
6.3.1. Reflexive-only manner verbs	264
6.3.1.1. Members of the class of reflexive-only manner verbs	264
6.3.1.2. Event structure and lexical aspect of reflexive-only manner verbs	266
6.3.2. Reflexive-only result verbs	267
6.3.2.1. Members of the class of reflexive-only result verbs	267
6.3.2.2. Event structure and lexical aspect of reflexive-only result verbs	268
6.4. Summary	270
6.5. Summary of chapters 3-6	270
7 Morphosyntactic and morpholexical operations	
7.1. Introduction	275
7.2. Morphosyntactic and morpholexical operations as accessing different levels of information	276
7.3. Morphosyntactic operations	276
7.3.1. Causative derivation	276
7.3.1.1. The causative marker <i>ra-</i>	279
7.3.1.2. Causatives from intransitive verbs	281
7.3.1.2.1. Causatives from internally caused verbs	282
7.3.1.2.2. Causatives from uncaused verbs	283
7.3.1.3. Causatives from transitive verbs	283
7.3.1.4. Causatives from causative/inchoative alternating verbs	285
7.3.1.5. Causatives from reflexive-only verbs	286
7.3.1.6. Summary on causative derivation	287
7.3.2. The passive alternation	289
7.3.2.1. Similar constructions in other Central Mande languages	296
7.3.2.2. Summary on the passive alternation	304
7.4. Morpholexical operations	304
7.4.1. Distributive derivation	304
7.4.1.1. The distributive marker <i>ma-</i>	305
7.4.1.2. The distributive quantifying over the degree of change	307
7.4.1.3. The distributive marker pluralizing an event or its participants	309
7.4.1.4. Summary on distributive derivation	312
7.4.2. Iterative derivation	312
7.4.2.1. The iterative marker <i>i-</i>	312
7.4.3. The unexpressed object alternation	316
7.4.3.1. Activity readings for non-alternating transitive verbs of change of state	319
7.4.3.2. Summary on the unexpressed object alternation	321
7.4.4. The applicative alternation	321

7.5. Summary	323
8 Unaccusativity	
8.1. Introduction	327
8.2. Two classes of intransitive verbs	327
8.3. Approaches to unaccusativity	330
8.3.1. Unaccusativity as a deep structure phenomenon	330
8.3.2. Split intransitivity as a semantic phenomenon	331
8.3.3. Unaccusativity relying on the features external vs. internal cause	332
8.4. Verbs and possession in Jalonke	334
8.4.1. Transitive verbs in the possessive constructions	334
8.4.2. Intransitive verbs in the possessive constructions	336
8.4.2.1. Intransitive verbs that are alienably possessed	336
8.4.2.2. Intransitive verbs that are inalienably possessed	336
8.4.3. Summary on verbs and possession	341
8.5. A tentative explanation	341
8.5.1. A synchronic or diachronic phenomenon?	341
8.5.2. A syntactic or semantic phenomenon?	342
8.6. Summary	345
9 Argument realization in discourse	
9.1. Introduction	349
9.2. Background to the study	350
9.3. The sample	357
9.3.1. Genres included	358
9.3.2. Categories of analysis	362
9.4. The structure of the overall sample	363
9.4.1. The distribution of verbal predications over argument structure classes	363
9.4.2. The distribution of verbal predications over valence classes	364
9.4.3. The distribution of alternating and non-alternating tokens	365
9.4.4. The distribution of transitivity classes over valence classes	367
9.4.5. The distribution of non-alternating and alternating tokens over argument structure classes	368
9.4.6. The 20 most frequent verbs in the sample and their properties	370
9.4.7. Discussion of the findings for the overall sample	375
9.5. Variation across genres	377
9.5.1. Distribution of verbal and non-verbal predications and one-participant and two-participant clauses over genres	378
9.5.2. Distribution of valence patterns over genres	380
9.5.3. Distribution of alternations over genres	382
9.5.4. Overview of the properties of the different genres	385
9.5.4.1. Story	385
9.5.4.2. Personal narrative	387
9.5.4.3. Letter	389
9.5.4.4. Historical narrative	391
9.5.4.5. Conversation	393
9.5.4.6. Play	395
9.5.4.7. Speech	397
9.5.4.8. Action description	399
9.5.5. Discussion of the findings for genres	401
9.6. Variation across speakers and texts	401
9.6.1. Variation across speakers	401

9.6.2. Variation across texts	403
9.6.3. Discussion of the findings for speakers and texts	404
9.7. Summary	404
10 Conclusion	
10.1. Summary of the thesis	409
10.2. Contribution to language description	410
10.3. Contribution to theories of argument structure	411
10.4. Questions for further research	421
Appendices	
Appendix 1	425
Appendix 2	426
Appendix 3	430
Appendix 4	431
Appendix 5	446
References	455
Samenvatting	479

ABBREVIATIONS AND CONVENTIONS

Abbreviations used in interlinear glosses and in text

1,2,3	1 st , 2 nd , 3 rd person	L	low tone
ABSTR	abstract	N	in phonology section:
C	consonant		nasal
CAUS	causative		elsewhere: noun
caus./inch.	causative/inchoative	NEG	negation
	alternating	NP	noun phrase
CM	Central Mande	O	object
DEM	demonstrative	P	postposition
DEF	definite	PAST	past
DET	determiner	PF	perfect
DIM	diminutive	PL	plural
DISC	discourse marker	PP	postpositional phrase
DIST	distal	PRIV	privative
DISTR	distributive	PROX	proximal
E	exclusive	S	subject
EMPH	emphatic	SG	singular
FOC	focus	SUBJ	subjunctive
H	high tone	TAM	tense, aspect or
HAB	habitative		modality
I	inclusive	tr.	transitive
IDEO	ideophone	V	in phonology section:
INACT	inactual tense		vowel
INT	intensifier		elsewhere: verb
IPFV	imperfective		
IT	iterative		
itr.	intransitive		

Notation conventions used in examples

- morpheme boundary
- . separates categories encoded by a portmanteau morpheme
- : morpheme break not indicated in the text line
- ... omission
- () any comments

Example labeling

Examples are labeled in brackets below the example. Examples resulting from elicitations appear without source labels. Examples from texts constituting observed communicative events and staged communicative events for which no specific stimulus was used bear the name of the text and the reference number of the sentence within the text, e.g. (Jalonke 031). Examples from texts constituting staged communicative events for which a visual stimulus was used are labeled with the code for the stimulus followed by the consultant code or first name and the item number, e.g. (Caused Positions-AB 03, Tomatoman-Mariama 09).

INTRODUCTION

CHAPTER 1

1.1. MOTIVATION FOR THE STUDY

This thesis investigates argument structure classes in Jalonke, a hitherto undescribed Central Mande language. Verbs form one of the arguably universal major word classes. Verbs denote events and states, and these events and states have participants. The number and status of these participants is reflected in syntax in the number and grammatical function of the NPs that appear with verbs. Participants can be encoded by arguments and adjuncts. Verbs differ in terms of what arguments and adjuncts they can or must occur with (*Jürgen read my thesis with zeal* vs. *The comments arrived*). The array of arguments and adjuncts of a verb constitutes that verb's valence or subcategorization frame. Grammarians noted early on that a verb's subcategorization frame is to a significant extent predictable on the basis of the verb's meaning. Thus, according to Levin (1993), many English verbs of contact by impact, such as *hit*, *bang*, and *beat*, share the same subcategorization frames and allow e.g. transitive uses (*The man hit the child*), resultative phrases (*The wind banged the window shut*), and participate in the conative alternation (*He hit the ball* vs. *He hit at the ball*). Nevertheless, in every language there are clearly limits to this predictability, and so a verb's subcategorization frame is a lexical property of that verb, to be learned together with the verb's meaning. The English verbs of contact by impact *swat* and *swipe*, for instance, share many syntactic properties with *hit*, *bang*, and *beat*, but differ from them in that they do not participate in the with/against alternation (*He hit the stick against the fence/He hit the fence with the stick* vs. **He swatted the dishcloth against the fly/He swatted the fly with the dishcloth*). The lexical entry of a verb thus encompasses minimally a phonological form, a type of state or event the phrase or clause projected from the verb denotes, and a subcategorization frame.

But there is more to consider. For speakers to have learned a given verb means that they not only know what kind of event the verb is used in reference to and what arguments and adjuncts the verb can or must occur with, but also which participants

CHAPTER 1

of the event are encoded by which of the arguments and adjuncts (*I feared the comments* vs. *The comments frightened me.*). This information is spelled out in a verb's **argument structure**. Again, to a large extent a verb's argument structure is predictable from the verb's meaning, but there are exceptions which make it necessary to assume that the argument structure of an individual verb is a lexical property of that specific verb.

This thesis is concerned with those aspects of argument structure that **are** predictable from the lexical meaning of a verb. These aspects can be captured in terms of a set of principle that relate certain semantic properties of a verb to certain of its subcategorization principles. These principles vary from language to language, if for no other reason than because the syntactic properties of arguments and adjuncts vary from language to language. A key question of research on the syntax-semantics interface over the last two decades has been whether there is a universal core to argument structure, a subset of the principles that determine the 'linking' of event participants to arguments and adjuncts that is shared across all languages. This is an empirical question, and the only way to answer it is by studying argument structure in as many typologically diverse languages as possible. Such an endeavor is no easy undertaking, since it involves careful examination of the syntactic and semantic properties of a great number of verbs in every language. The present study attempts to contribute to this goal, by providing a detailed and comprehensive analysis of argument structure in Jalonke. The study proceeds by grouping verbs into classes on the basis of their argument structure properties, which means first and foremost on the basis of their subcategorization properties, i.e. the types of arguments and adjuncts they occur with. The question is then whether there are any semantic properties that are shared among all or most of the verbs in each of these classes and only among them. Where such properties can be determined, they represent the best semantic predictor of a verb's argument structure, and thus presumably those meaning components to which the principles of argument structure are sensitive. In other words, the principal question throughout this dissertation is, given a verb with certain syntactic privileges, what aspects of the meaning of this verb **motivate** its syntactic properties?

The present study thus explores Jalonke verbs from the two perspectives of argument structure and the meaning components motivating it. **Argument structure** (properly introduced together with other fundamental notions in 1.7 below) is an abstract representation of the number of, and the prominence relations holding between, a verb's participants. Argument structure is taken to be fed by other features

INTRODUCTION

of a verb. These features are the verb's **event structure**, or the information about its temporal properties, semantic participants, and causal features that is stored in the lexicon. The information contained in the event structure co-determines and is complemented by properties that come about compositionally through the interaction of the event structure and properties of the clause, which can further spell out a verb's **lexical aspect** and **participant structure**. A verb's event structure properties are expected to determine the number of and hierarchical relations between the verb's participants, reflected in the argument structure. However, argument structure is minimized in that it only contains the information necessary to predict the default or initial projection of a verb's participants into syntax, or the default linking of the verb's participants to grammatical relations. Additional linking rules are responsible for cases of linking or mapping of identical argument structures onto different syntactic functions, e.g. in active-passive pairs.

Argument structure classes are classes of verbs that can be established through systematic differences in initial or default projection of the verb's participants into syntax, e.g. in an active rather than a passive clause. Argument structure classes can in turn be decomposed into more fine-grained verb classes based on properties of a verb's event structure, such as causation type and temporal properties, as well as on lexical aspect and participant structure properties. The fundamental assumption throughout this study is that it is possible to determine those features of a verb's event structure that constitute its grammatically relevant components of meaning, i.e. those features that are the semantic determinants of its argument structure. Further, it is presumed that it is possible to define subclasses within the large argument structure classes based on temporal properties of the event structure, lexical aspect, and the causation type determined by the event structure.

Many of the argument structure and event structure classes distinguished in languages are cryptotypes in Whorf's (1956: 92) sense, i.e. they are not formally indicated on the verb. In this case, only an exploration of the range of syntactic contexts in which a verb occurs, the aspectual and causal operators with which it combines and their meaning, and the interaction of these properties reveal its membership in an argument structure and event structure class.

An investigation of the semantic determinants of argument structure is extremely relevant for the study of clause structure, because such an investigation elucidates a great portion of the mechanisms at work at the syntax-semantics interface. There are very detailed (and partly conflicting) proposals for the design of the syntax-

CHAPTER 1

semantics interface made on the basis of English and a few other well-studied languages. Systematic cross-linguistic accounts of argument structure determining properties are in most cases available only for limited numbers of verbs or restricted semantic domains. These accounts point to cross-linguistic variation with respect to argument structure class membership for notionally similar verbs.

In addition to differences in criteria determining basic argument structure across languages, languages are also known to contrast in the principles governing **argument realization**. Argument realization concerns the relationship between a verb's argument structure and the number of arguments necessarily or optionally present in clauses. Languages vary drastically in this respect – some languages exhibit a very close alignment between the number of arguments predicted by a verb's argument structure and the number of arguments necessarily realized by that verb in discourse, whereas other languages allow massive deviations from argument structure in actual discourse. The presence of such a misalignment between argument structure and argument realization is often taken to invalidate the very notion of argument structure as lexically specified. Therefore, argument structure should not be studied independently of discourse, but be tested against argument realization.

An investigation of the properties that determine basic argument structure in a given language is thus an area of great importance for central domains of linguistic theory. An account of argument structure classes in an undocumented non-Indo-European language can be expected to increase our knowledge about variability and universality of argument structure classes. Such an account can further test far-reaching hypotheses made mainly on the basis of English. This knowledge in turn can in the future be used to deepen our understanding of what generalizations children have to make in the acquisition of verbs in order to master their language's target structure. Finally, the issue of learnability and what information feeds it is relevant to the question of whether this information is innate or acquired.

As stated above, there is a wealth of references on all aspects of verbal behavior, covert or overt, for English and a handful of better described languages (see reference sections in Levin 1993 for examples), while detailed accounts of verb classes are not easy to come by for the majority of the world's languages (but see Essegbey 1999, Margetts 1999, Schultze-Berndt 2000). Deplorable as this is, it has good reasons. To really probe into distinctions that in many cases are covert is a painstaking endeavor that without the existence of extensive corpora, native speaker competence or psycholinguistic machinery seems hopeless. Moreover, many ac-

INTRODUCTION

counts of non-Indo-European languages constitute field-based first descriptions that intend to cover the whole grammar of a language in very limited time. For these reasons, detailed investigations of verbal argument structure classes are almost non-existent for lesser described languages. As a consequence, the theoretical discussion of verb classes and their underlying semantic motivation is to a large extent exclusively based on data from a group of closely related, well-researched Indo-European languages, if not on an inspection of English alone. It is the aim of this thesis to contribute to building a more diverse empirical basis to a theory of verbal argument structure by presenting data from a previously undescribed, non-Indo-European language. It is equally hoped that the present study will make a contribution to methodological advances in the investigation of argument structure under field conditions. A language-particular examination of argument structure necessarily needs to take existing theories and assumptions into account. It is, however, impossible in a study which itself is not a cross-linguistic treatment of argument structure to consider cross-linguistic evidence in a systematic fashion. Since the most widely applicable theories of argument structure concern English, analyses of English serve as the background and contrast for the detailed treatment of Jalonke, although occasionally data from other languages are drawn upon as well.

1.2. RESEARCH QUESTIONS

The central research questions underlying this study are the following:

- Which are the major argument structure classes of Jalonke?
- What, in addition to their argument structure, are the formal properties of these classes?
- Are there semantic factors that determine the membership of verbs in one of these major argument structure classes?
- If there are semantic factors underlying argument structure classes, what are they?
- If there are semantic factors underlying argument structure classes, how do these factors motivate the formal properties of the argument structure classes, that is, to what extent can unaccusativity, the participation in alternations, the compatibility with valence changing operations and the meaning change occurring through them, be accounted for by semantic factors?
- What is the relationship between argument structure and argument realization?

CHAPTER 1

- To what extent does argument realization depend on the argument structure class of a given verb, and to what extent can realization obliterate the evidence for argument structure class membership? Put differently, how good a predictor of a verb's argument structure is the set of arguments that verb occurs with in a particular clause and vice versa?

1.3. PREVIEW OF ANALYSIS

In the following chapters, I will identify the major Jalonke argument structure classes according to their formal properties. The formal properties considered are the following:

- The number and syntactic function(s) of the argument(s) with which a verb can or must occur
- The alternation(s) in which a verb participates
- The valence-changing operation(s) a verb undergoes
- The meaning change entailed by the valence-changing operation undergone
- The behavior of the verb under nominalization

I will further identify the meaning components that predict the argument structure class membership of verbs. I will show that grammatically relevant components of meaning yield subclasses based on shared event structure templates. These temporal event structure subclasses are not always coextensive with argument structure classes but cross-cut them in a number of cases. Additional features such as causation type, likelihood of the event to be construed as uncaused, and a positive specification for control will be used in order to explain the membership of verbs with identical event structures in different argument structure classes. In brief, I will try to account for the formal properties of argument structure classes with reference to the semantic properties shared by all members of a given argument structure class and by the respective subclasses. The semantic properties considered are the following:

- Dynamicity vs. stativity of the verb
- Presence or absence of state-change semantics in the verb's event structure
- The verb denoting an event construed as internally caused, uncaused, or externally caused
- Presence or absence of a positive specification of the verb for control
- Presence or absence of a manner component in the verb's event structure

INTRODUCTION

Finally, I will present a quantitative study that systematically assesses how the previously defined argument structure classes of Jalonke pattern in discourse, looking at the number of arguments realized.

The central findings of the study are briefly previewed below. Table 1 gives an overview of the argument structure classes established in chapters 3-7 and summarizes their formal and semantic properties.

Table 1: Overview of Jalonke argument structure classes and their formal and semantic properties

Argument structure class	Formal properties	Semantic properties
Intransitive verbs	<ul style="list-style-type: none">▪ Cannot enter transitive clauses unless morphologically causativized (with the exception of 2 verbs participating in the applicative alternation)▪ Output of causative derivation is a transitive verb▪ Participate marginally in the applicative alternation▪ Nominalize differently from transitive verbs	<ul style="list-style-type: none">▪ Denote eventualities construed as internally caused or uncaused▪ Are manner verbs, stative verbs or result verbs
Transitive verbs	<ul style="list-style-type: none">▪ Enter transitive clauses and intransitive clauses▪ Participate in the passive alternation and receive a passive interpretation in intransitive clauses▪ Participate marginally in the unexpressed object alternation (5 verbs)▪ Output of causative derivation is an expanded transitive verb▪ Nominalize differently from intransitive verbs	<ul style="list-style-type: none">▪ Denote eventualities that are construed as externally caused▪ Are manner verbs, manner-with-result verbs, or result verbs

CHAPTER 1

Argument structure class	Formal properties	Semantic properties
Causative/inchoative alternating verbs	<ul style="list-style-type: none"> ▪ Enter transitive and intransitive clauses. ▪ Intransitive clauses with causative/inchoative alternating verbs are ambiguous and allow both active and passive interpretations ▪ Output of causative derivation can be a transitive or an expanded transitive verb 	<ul style="list-style-type: none"> ▪ Denote eventualities that can be construed as externally caused and uncaused ▪ Are stative and result verbs
Reflexive-only verbs	<ul style="list-style-type: none"> ▪ Enter transitive clauses with obligatorily coreferential S and O ▪ Output of causative derivation is a transitive verb 	<ul style="list-style-type: none"> ▪ Denote eventualities that are construed as always happening under their single argument's control ▪ Are manner verbs and manner-with-result verbs

The quantitative study on argument realization in chapter 9 tests how the argument structure classes preassigned to verbs are matched by the syntactic realization of their arguments in clauses of a discourse sample. The major results of the study can be captured as follows. The percentage of non-alternating verb tokens in the sample, that is tokens that appear with the number of arguments predicted by their lexical argument structure, is extremely high – 92.2%. All the remaining cases, that is the 7.8% of cases where verb tokens realize less or more arguments than predicted by their lexical argument structure, can be accounted for in terms of alternations licensed by the language. These findings do not only corroborate the argument structure classes established on the basis of formal and semantic properties, they also demonstrate that in Jalonke, argument structure class membership is an extremely good predictor of the number of realized arguments and vice versa.

INTRODUCTION

1.4. VALUE OF THE JALONKE DATA

The descriptive findings presented in this thesis are relevant to the following areas of linguistics:

- (i) Theories of argument structure
- (ii) Field methodology and semantics
- (iii) Mande linguistics

(i) Theories of argument structure. One major goal of the present study is to broaden the empirical base for theories of argument structure based on cross-linguistic data. Although the focus of the thesis is thus empirical rather than theoretical, the Jalonke data already call for a refinement of some theoretical assumptions. Theories of argument structure can be distinguished according to whether they assume that verbs project their arguments into syntax (e.g. Bresnan 2001, Levin & Rappaport Hovav 1995, Pinker 1989, Rappaport Hovav & Levin 1998) or that constructions specify the number and status of arguments (e.g. Goldberg 1995, 1997, 2002, 2003). On the former account, verbs should exhibit regularities in default linking, and all syntactic configurations of verbs deviating from default linking should be explainable in terms of alternations captured in linking rules. On the latter account, verbs are expected to have a very general meaning that does not contain information about the number and status of their arguments, because this information is added by the construction(s) in which verbs occur. The close alignment between argument structure and argument realization in Jalonke raises the question of whether all languages store the same amount of information on syntactic configurations in their verbs or, to put it differently, whether some languages rely more on lexical specification of arguments vs. construction-specific realization of arguments than others. Moreover, the parameters that govern under what circumstances arguments must be realized or can be omitted vary widely across languages. Since these parameters have consequences for the admission of a level of argument structure or on the projection of arguments into syntax vs. the absence of such a level of information, argument structure and argument realization should be studied together.

(ii) Field methodology and semantics. The literature on argument structure does not systematically address problems for semantic analysis that are inherent to the study of lesser described languages. These problems concern the native speaker intuitions commonly underlying examples and their interpretation in the study of well-described languages, which are impossible to apply to a language if the lin-

CHAPTER 1

guist is not a native speaker. The problems consist also in the inapplicability of semantic tests well-established for Indo-European languages to unrelated languages that lack the grammatical features making these tests possible. A further limiting factor is the lack of extensive corpora. It is hoped that the tests applied in this thesis will contribute to broadening and refining the battery of tests available for the issues discussed. Not very many field-based descriptions employ visual stimuli, quantitative methods or experiments. It is hoped that the present study illustrates the advantages and limitations of these methods when conducting field-based linguistic research.

(iii) Mande linguistics. In offering a grammatical sketch and a thorough description of the verbal system of Jalonke, this thesis increases our knowledge of the little known Mande languages. Even for those Mande languages that have been described, detailed accounts of argument structure classes are difficult to come by. It is hoped that this thesis, by offering such a detailed account for Jalonke, will broaden the empirical basis for the study of the commonalities and differences of argument structure classes within the language family, will resolve some controversial issues within Mande linguistics, and will offer working hypotheses for an investigation of argument structure in other languages of the group.

1.5. STRUCTURE OF THE THESIS

The thesis is divided into three parts. The present part gives information on the language and its speakers, presents an overview of the theoretical framework adopted, and outlines the methodology employed throughout the thesis. The second part presents essential grammatical features of Jalonke in chapter 2. The third and main part consists of an overview of the argument structure properties of the four large argument structure classes of Jalonke. Intransitive verbs are the subject of chapter 3, followed by transitive verbs in chapter 4, causative/inchoative alternating verbs in chapter 5, and reflexive-only verbs in chapter 6. Chapter 7 investigates the valence- and meaning-changing processes for the different argument structure classes. Chapter 8 examines unaccusativity in Jalonke. Chapter 9 consists of a quantitative study on the realization of arguments in discourse. Chapter 10 summarizes the findings and places them into a wider theoretical context.

1.6. THE LANGUAGE AND ITS SPEAKERS

1.6.1. LANGUAGE NAMES AND GEOGRAPHICAL DISTRIBUTION

‘Jalonke’ is the name used by the speakers of the variety I work on to refer to their language. The language is dispersed over a vast territory in four different West Af-

INTRODUCTION

rican countries and is known under slightly different names. The language is called ‘Jalonke’ in the whole region where my field site is located, the Futa Jalon in Guinea (see Map 1). In this mountainous region dominated by Fula, some isolated pockets of Jalonke speaking communities remain. The same denomination, sometimes with the different spellings ‘Dialonké’ or ‘Diallonké’, is used for other Northern varieties. These varieties are those spoken in and around Faléya in Mali, in the Balaki district of Guinea,¹ stretching into Senegal, and near to Koumbia in Guinea. The Southern varieties spoken around Faranah in Guinea and in the neighboring country Sierra Leone² are generally referred to as ‘Yalunka’. The term ‘Yalunka’ has been adopted as a cover term for all the varieties (Kastenholz 1996, Ethnologue 2004). Therefore, throughout this thesis, I use ‘Jalonke’ to designate specifically the variety studied here, ‘Dialonké’ whenever the variety of Faléya and the other Northern varieties are meant, and ‘Yalunka’ whenever reference to the language as a whole is made.

¹ *This variety is sometimes referred to as the Sangalan dialect, probably after the name of the administrative center under French administration (de Lavergne de Tressan 1953).*

² *Here again, an alternative designation makes use of the colonial administrative center in which the language was located by calling it Solima-Yalunka (de Lavergne de Tressan 1953).*

CHAPTER 1

Map 1: Guinea and extension of Soso and Yalunka language areas



The different dialect areas of Yalunka are not contiguous to each other, but separated by large areas of predominantly Fula speaking communities. Not much is known about the exact number of speakers of the language in the different regions. Sources cite the numbers of 113,000 speakers of Yalunka for all areas (Platiel 1978), or of 87,000 for Guinea (Ethnologue 2004), but in the absence of reliable and recent census data, these numbers are not to be trusted too much. The numbers given in Platiel (1978) are based on old colonial census data given in Westermann & Bryan (1952) and de Lavergne de Tressan (1953), modified by adding an estimated population growth rate. The numbers appearing in the Ethnologue (2004)

INTRODUCTION

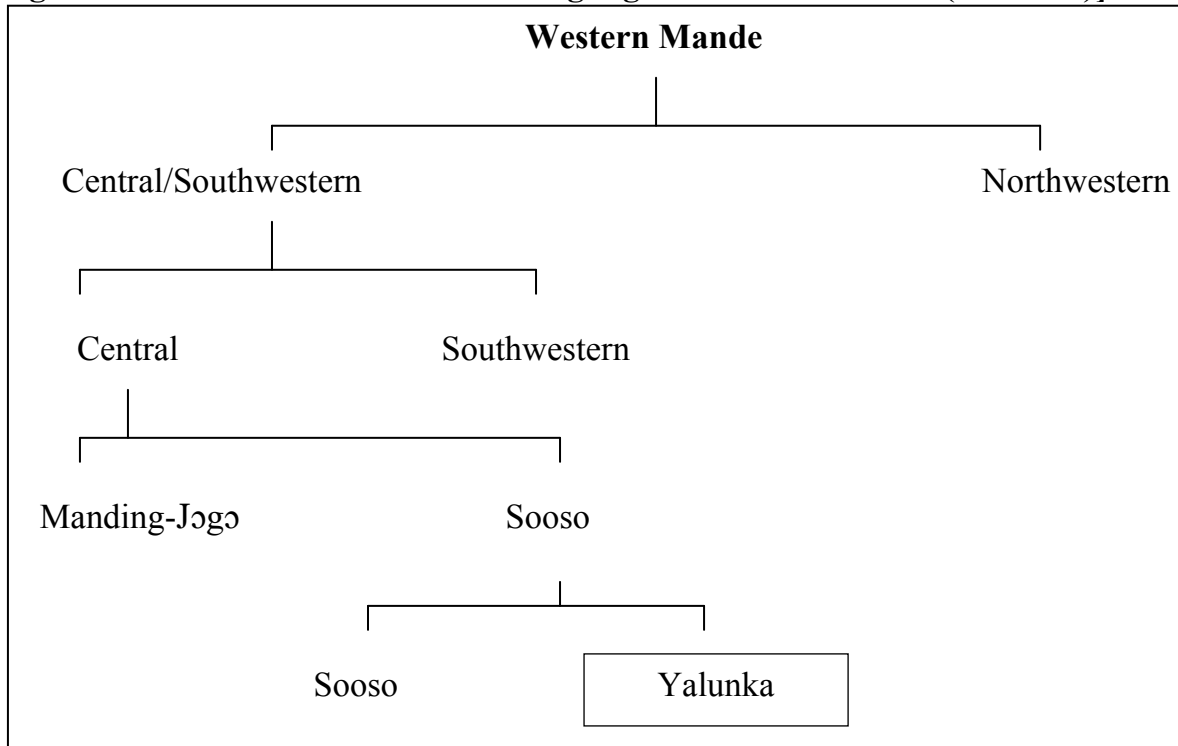
are almost identical to colonial census data from 1950, given in de Lavergne de Tressan (1953) as 87,875. As to the status of the language, it is at least known that it is a minor language and that the speakers in their majority are bilingual. This is even true for the enclaves still constituting homogeneous Yalunka areas. In the Northern areas – with the exception of Mali where Bambara is taking over (Denis Creissels, p.c.) – Fula is the dominating language. In the Southern areas two different Mande languages, Maninka and Koranko, are concurring with Yalunka.

1.6.2. THE GENETIC AFFILIATION OF YALUNKA

Yalunka belongs to the Mande branch of the Niger-Congo phylum. According to the most recent internal classification (Kastenholz 1996), its place within Mande is in the Central subbranch of Central/Southwestern Mande within the higher node Western Mande (see Figure 1). Soso is the sister language of Yalunka, as also attested by earlier classifications (Welmers 1971, Dwyer 1989). The two languages are reported to be very close to each other; sometimes they are even regarded as a dialect continuum (Kastenholz 1996). They are, however, not in contact – as for the different Yalunka varieties, several hundreds of kilometers of Fula populated areas lie between Yalunka and Soso areas. While the lexica of both languages are almost identical, several independent grammatical innovations have decreased mutual intelligibility to an important degree. Speakers of the two languages assume a common origin, but asked about their ethnic and/or linguistic identity, consider themselves as distinct from each other.

CHAPTER 1

Figure 1: Classification of Mande languages after Kastenholz (1996: 70)]



1.6.3. PREVIOUS RESEARCH ON YALUNKA AND SOSO

The oldest accessible source featuring a wordlist of Yalunka is present in Koelle (1854).³ Interestingly, the data figuring under that label do not resemble known varieties of Yalunka (or Soso) at all but look very close to Kankan-Maninka, a Manding dialect. There are two other varieties listed by Koelle as dialects of Soso, namely the Soso of Solima and the Soso of Tene, which seem closer to Yalunka than to Soso. This is especially true for Koelle's Soso of Solima, probably corresponding to Yalunka of Faranah, known also as Solima-Yalunka. For this variety, the nominal forms listed by Koelle do not appear with the nominal suffix *-i* of Soso, but with the Yalunka definite suffix *-na*. What on an impressionistic judgment seems equivalent to Soso is the variety Koelle calls Soso of Kisekise, a variety he locates close to Conakry, where Soso is spoken until today.

The available linguistic information on Yalunka is scarce. For one of the Northern varieties, the Dialonké spoken in Faléya in South Western Mali (presumably iden-

³ Sigismund Wilhelm Koelle was a German agent of the British Church Missionary Society active in Bible translation and the study of West African languages in Sierra Leone. He spent five years, from 1847 to 1852, in Freetown and seized the opportunity to work with released and resettled African slaves from all over West Africa that were brought to Freetown at that time. There, he compiled his "Polyglotta Africana", an extensive comparative wordlist for approximately 120 languages.

INTRODUCTION

tical to the variety spoken on the Guinean side of the border) an unpublished word list (Creissels ms.) exists. For the same variety, four articles treat aspects of nominal and verbal morphology (Keita 1987/88, 1990), syllable structure (Creissels 1989), and tonal characteristics (Keita 1989) respectively.

As for the Southern varieties, only one isolated source exists: an article on the definite marker of the Yalunka of Sierra Leone (Harrigan 1963). Apart from these limited resources, no linguistic material on Yalunka is known to me.⁴

The research tradition for Soso, in stark contrast to Yalunka, leads back to the beginning of the 19th century. From then on, missionaries started translating catechisms (Brunton 1801, 1802a, Raimbault 1885a), compiling wordlists (Clarke 1848, Koelle 1854), and writing grammars (Brunton 1802b, Duport and Rawle 1869, Lacan 1942) and dictionaries (Raimbault 1885b). The wealth of early documents reflects the first settlements of Europeans along the Guinean coast, in Soso dominated territories. Contemporary linguistic studies comprise a grammar (Houis 1963) and a manual (Friedländer 1974) as well as articles on the language.⁵

1.6.4. THE FIELDSITE

The fieldwork for this thesis was carried out in Saare Kindia, a village 45 km northeast from Labé, the capital of the Futa Jalon.⁶ Saare Kindia is located in the department of Koumbia, in the Missira subdivision. Its population consists of Jalonke, Fula, and some civil servants of different linguistic affiliation. The exact number of inhabitants and the distribution of languages are unknown due to the absence of any statistical data, but my impression is that Jalonke speakers are the majority of the population in the village.

Saare Kindia is one of at best a handful of villages where Jalonke still survives in the Futa Jalon. In some villages listed in colonial and postcolonial sources (de Lavergne de Tressan (1953), anonymous undated map, University of Conakry) like

⁴ A missionary, George Pruett, has recently started linguistic work on Faranah-Yalunka as a preliminary to a Bible translation. The rebel invasion into the South of Guinea in fall 2000 forced him to leave the area and continue his work with consultants in Conakry. Since his work is in progress, it was not used for the purpose of this thesis.

⁵ For an exhaustive bibliography, see Kastenholz (1988).

⁶ In addition, ten days were spent in the department of Gaoual, subdivision Koumbia, where some isolated Yalunka communities persist. A wordlist and some texts and songs were collected, but since these data were not exploited for the purpose of the present thesis, no further mention of this variety is made.

CHAPTER 1

Loumbutaa, Ganfataa and neighbouring villages, Jalonke is on the decline.⁷ Together with the nearby village Heeriko, Saare Kindia so far resists the growing pressure of Fula.

1.6.5. HISTORY

The Jalonke and Soso are the first known inhabitants of the Futa Jalon. Portuguese sources (cited in Bühnen 1994) from the mid-fifteenth to the late seventeenth century report that this area constituted a kingdom, Jalo, that was inhabited by Soso, Jalonke, and Fula. Soso and Jalonke seem to have referred interchangeably to one single ethnic and linguistic group at that time.

According to oral history of the Jalonke, their origins lie in the East, probably in present-day Mali. Nothing is known about their settlement in the Futa Jalon and its causes. During the 15th century, a first wave of immigration occurred, consisting of non-islamized Fula speaking people (Pulli) who came from the Futa Toro (in present-day Senegal) and the Macina (in present-day Mali) (Houis 1953, Levtzion 1973). As stated by historical narratives, these newcomers were given ground and coexisted peacefully with the autochthones. The situation changed in the 17th century, when new Fula immigrants, this time fleeing the Sudan after the breakdown of the Songhai empire and the Futa Toro, arrived, bringing Islam with them. After a period of infiltration and secret practising of their religion, the newcomers set out to conquer the country, waging a *jihad* against the indigenous pagan population, Jalonke and Pulli. An important step towards control over the region took place around 1743, when Karamoko Alfa gained suzerainty of the Futa Jalon. When his successor, the Almamy Ibrahima Sori, transferred the capital of the Futa Jalon to Timbo and installed his administrative network, a massive exodus of Jalonke and Soso began. Many Jalonke and Soso fled to the coast, where they merged with earlier Jalonke emigrants from the Futa Jalon, and where their language developed independently from the Jalonke of the Futa Jalon. These refugees ultimately adopted the name Soso. Those non-Islamic Pulli, Jalonke and Soso (today known under the name Jalonke) who remained in the Futa Jalon, lost their status of free people.

The Fula created a hierarchical society, consisting of slaves, people of caste, commoners and nobles (Dupire 1994). While only Fula had access to the status of no-

⁷ I encountered a number of speakers from these places, invited as representatives of their communities for a Jalonke sacrifice taking place in Saare Kindia, and they communicated with their fellow Jalonke in Fula, although they are still able to conduct basic conversations in Jalonke.

INTRODUCTION

bles, citizens converted to Islam belonged to the mass of commoners. For non-converted pagans, there was no choice; they were inevitably assigned to the group of slaves. Still, there were differentiations regarding the status of slaves; those slaves that had been captured during wars or razzias were treated like prisoners and could be resold. In contrast, those slaves attached to a family, mostly islamized Pulli and Jalonke, couldn't be exchanged or resold and underwent a process of Fulanization. They adopted their masters's clan names and could even be liberated.

Not surprisingly, today, very few Jalonke remain in the Futa Jalon. In Saare Kindia, older people declare that before the independence, Jalonke and Fula lived as free people, but in strict segregation. Probably, the Jalonke speaking population of the village consists of the descendents of liberated slaves, since all the Jalonke have Fula clan names. For some families, it is still known that they used to be slaves in the past. It is left to speculation why these islamized and, to an important degree, fulanized people retained their Jalonke ethnic and linguistic identity. According to the local history, Saare Kindia was the first Jalonke settlement in the Futa Jalon when the Jalonke immigrated. The hut of the village founder, Maama Kindia, although lying in ruins, is still a holy place. Thus it is maybe the conscience of being at the beginning of the history of a people and the importance of preserving its vestiges that made the Jalonke in some places keep an identity separate from that of the conquerors.

The degrees of contact between Jalonke and Fula have changed since the independence of the country in 1958. The political change brought new social models conveying more equality, and a new elite of mobile dignitaries, gradually infiltrating the old system. As a result, the importance of the old caste structure is decreasing, and social exchange through marriage between people of different ethnic and social status, unthinkable fifty years ago, has become a concomitant fact of living together.

1.6.6. CONTACT SITUATION, ETHNIC AND LINGUISTIC IDENTITY

The lingua franca of the Futa Jalon is the Pulaar variety of Fula, a Niger-Congo language of the Atlantic branch. Elsewhere in Africa often a minority language, Fula has an important status in Guinea. It is spoken by ca. 40% of the population (Friedländer 1975, Ethnologue 2004), the majority of its speakers being located in the Futa Jalon. Fula was one of the national languages employed in primary

CHAPTER 1

schools during the reign of Sékou Touré.⁸ All speakers of Jalonke are bilingual in Fula, while the inverse does not hold for speakers of Fula. The bilingualism seems to have been established a long time ago (see 1.6.5).

The influence of new social developments like interethnic marriage on language attitudes is tangible. In mixed marriages, Jalonke tends not to be transmitted to the children, even more so if the mother is Fula. In the public sphere, Jalonke is losing more and more ground; at the mosque, at the market, and at public gatherings it is not heard anymore. Since only very few Fula master any Jalonke, Fula is the language of choice whenever a Fula speaker is present. But even in the absence of Fula speakers, codeswitching is pervasive.

Compared to the role of Fula, the impact of French on linguistic behavior is negligible. The older generation of men and the quasi-totality of adult women do not speak it.⁹ Among younger, formally educated people, codeswitching to French occurs, but is unimportant compared to Fula.

Jalonke in Saare Kindia generally affirm their ethnic and linguistic identity, in particular when talking to a linguist interested in the language. Still, this identity is much of an ‘internal’ affiliation that can easily be altered when leaving the village context. Jalonke living out of their language areas are invisible as such – if they ended up in a town in the Futa Jalon, they assume a Fula identity. Since they have full command of Fula, and since their family names are those of their former masters, i.e. fularized, they successfully melt into the majority. This is equally true for

⁸ *Sékou Touré was the first president, quickly turning into a dictator, from Guinean independence in 1958 till his death in 1984. His government introduced temporarily eight national languages into primary education. While the focus lay on the majority languages Fula, Maninka and Soso, representing 40%, 25% and 10% of the population respectively, less widespread languages such as Kisi (6.4%), Kpelle (5.8%) and Loma (3.3%) were also used. For a short period the program was even extended – whether it ever was functional for these languages is another question – to Koniagi and Basari, spoken only by small minorities. Teaching in national languages has been abolished since, and the only language of formal education is now French. (Percentages for Fula, Maninka and Soso: Ethnologue 2004; other numbers: Friedländer 1975)*

⁹ *According to the Millenium indicators of the United Nations Statistics Division for Guinea, in 1995 78% of the population older than 15 years were illiterate. For women, the ratio of illiterates is 64.1%, for men 50%. ‘Illiterate’ here should better be understood as ‘having no formal education, i.e. not speaking and writing French’, since not all of the adults without access to formal education are actually illiterate – for an explanation, see 1.6.9.*

INTRODUCTION

Conakry, the capital, where large homogeneous Fula quarters exist. Only few Jalonke adopt an alternative strategy: mainly those who have gone in their youth to Soso-populated areas, i.e. some neighborhoods of Conakry and surroundings, switch to Soso instead. It is assumed that this pattern is secondary because the Fula language enjoys much prestige in Guinea, but also because tuning into Soso demands more effort. Instead of adjusting one's ethnic identity to a linguistic identity that is already there, the taking on of a Soso identity is tied to an active learning of a close, but distinct language.

1.6.7. WAY OF LIFE

Jalonke and Fula in the Futa Jalon live off agriculture and cattle farming. The traditional agricultural cycle, consisting of cultivating the fields during the rainy season, followed by the harvest and a season of recreation, has been altered by the introduction of new cash crops from the 1970s on. The traditional crops millet, rice, cassava, sweet potatoes, and groundnuts now have their dry season-counterparts onion, cabbage and tomato. These new crops have particularly changed the life of women, since they cultivate the gardens, all situated in the plains on marshland close to streams. For the men, the main occupation during the dry season has not been altered much. They are in charge of all the representative tasks, including religious duties, the preparation of marriages, etc. These fill the six months from October to June during which it doesn't rain, interrupted by domestic tasks like the building and repair of fences, the covering of roofs, and the making of hay.

Cattle farming is not very work-intensive, since cattle are not herded as in most of the neighboring Fula villages, but graze freely wherever they can find some fresh leaves. Because the cattle are not led by a herdsman away from the village and the fields, it is the people that are fenced in. The whole village is intersected by a net of fences that protect the sweet potatoes, cassava, groundnut, and sometimes millet plantations surrounding the huts. The same is true for the gardens, and to a limited extent for the fields further away from the village. The system has its shortcomings, however. Every year, an important part of the harvest is destroyed by invading cattle. Other domestic animals include sheep, goats and chickens.

The village is composed of compounds, generally separated from each other by a fence. By default, a compound is lived in by a man, the head of family, his wives

CHAPTER 1

and their children,¹⁰ the man and each of his wives occupying their own huts. These family members are sometimes joined by older relatives.

The village has an essentially subsistence economy, since the farmers and their families have only very limited access to money. Only the few salaried civil servants such as school teachers and the male nurse can afford a more ‘westernized’ way of life. The village has neither electricity nor telephone, the only means of contact with the outside world being provided by bush taxis serving Saare Kindia on the market days twice a week.

1.6.8. SOCIAL ORGANIZATION

A strong hierarchical stratification is typical for the society, governed by the parameters of age and gender. A council of village elders rules the village; modern administrative structures are only superposed on the system in that e.g. the village or district headman is chosen from the pool of traditionally eligible dignitaries. Although no special register is employed when talking to older people, age distinctions are omnipresent in the language. Within the kinship system, different terms are used for siblings and uncles and aunts older vs. younger than the ego. People older than the speaker are addressed with the second person plural pronoun and greeted with *o maama* ‘2Pl ancestor’. Two special honorific verbs for ‘sit’ and ‘come’ supplete the ‘ordinary’ verbs if reference to people of a high age is made. This hierarchy is persistent also in non-linguistic behavior: children curtsy to older people; younger people avoid gazing directly at them; and people lower in age or status do not engage freely in a conversation but wait until they are specifically encouraged to do so.

The gender stratification is less explicit linguistically, but nonetheless ubiquitous in all aspects of social life. Economically, women are very independent. Although men are in theory obliged to give money for the daily expenses for salt, Maggi cubes, and clothing, called *sabɛɛ sarena* ‘sauce-DEF price-DEF’, in reality they only rarely do so. Thus, it is in fact left to the women to support their families, including the men, since they are responsible for the provision of food as well as for most of the expenses related to the children. The economic responsibilities of women have become heavier due to the growing rural exodus of men. Traditionally, men left during the dry season in order to work in gold or diamond mines or

¹⁰ *These do not only comprise biological children, but often also children of relations, many of which, according to the kinship terminology, are regarded as ‘sons’ and ‘daughters’.*

INTRODUCTION

on plantations in Guinea and neighboring countries, and then returned to work their fields. This pattern has become obsolete, cities having gained much attraction, and nowadays men migrate for good. Having found an unskilled job in town but being married in the village, they return at best once a year. This new reality already has an impact on the traditional division of labor between the two genders. In theory, women are concerned with everything connected to house and garden, including the milking of the cows,¹¹ men and women are involved in the field work, men carry out reparation and maintenance work and fabricate tools. Factually, more and more of these tasks fall to the women because there are simply not enough young men around.

The Jalonke are without exception practitioners of Islam. As mentioned, the religion was brought to the Futa Jalon by the Fula, who, coming from the North, were one of the earliest ethnic groups of Subsaharan Africa being in touch with that religion. Preislamic customs were integrated into the new religion; fetish priests and marabouts coexist.

The life in the village is only marginally touched by 'modern' life. Maybe the biggest influence of the Guinean state is present in the school system. Saare Kindia has a primary school and a middle school, and although the schooling rates are low,¹² schooling has an important impact on the society: the school is the only place where the official language French is spoken and taught. Moreover, the mobility of civil servants, especially teachers, creates the only natural context for the use of French. Schooling also modifies the economic organization. Instead of constituting additional manpower, children attending school are now transformed into cost factors for their families. The unavailability of children attending school to help in the household and in the fields has also increased the overall workload for adults, especially women.

¹¹ *The cord used for attaching cows, a traditional part of the Fula dowry (Dupire 1970), has also become integrated into Jalonke marriage patterns, reflecting women's responsibility for milking the cows.*

¹² *According to the Millenium indicators given by the United Nations Statistics Division, in 1996 the total enrolment ratio for the primary level in Guinea was 42%. 50% of the boys and 33% of the girls were enrolled at primary school. Given that these numbers are UNESCO estimations, and taking into account that enrolment ratios in rural areas generally are lower, in a village like Saare Kindia they are probably inferior.*

CHAPTER 1

1.6.9. LITERACY, SCRIPTS AND POSSIBILITIES OF LANGUAGE REVIVAL

French plays practically no role in written communication, except for official documents. This does not entail that Jalonke and Fula societies have an exclusively oral culture. Almost all boys and a smaller number of girls acquire knowledge of the Arabic alphabet at the Koranic schools. Generally they do not learn Arabic, but are merely trained to read suras whose sense remains obscure to them. But the introduction of the Arabic alphabet has led to an adapted version of it, the Ajami alphabet, used to write Fula and other African languages located in the sphere of influence of Islam (see Vydrine 1998, Lüpke in prep.-b). This Arabic-based script is mastered by large parts of the adult male population and is used for writing personal messages, tax lists, etc. Its status is threatened, however, by the Latin alphabet associated with French which is transmitted in school. Different generations thus employ different scripts, and as a consequence, different languages in writing. Several other scripts are in circulation, too. Although the old Latin-based language materials for the national languages introduced into primary education under Sékou Touré are out of use, and only few ‘old timers’ are able to write some words in their native language in these scripts, they have found a successor. Literacy campaigns for adults – in this region exclusively in Fula – employ an adapted Latin script, featuring IPA-symbols for sounds not representable by the standard alphabet. To top the complexity of systems, a non-alphabetic script baptized “batôn-calebasse” (stick-calabash) after the two symbols it is composed of is also sporadically taught in adult literacy classes.

Of course, any attempt at a language revival based on written language materials and the use of the language in adult alphabetization must remain hopeless in view of this complicated situation.¹³ Moreover, a locally isolated effort would be disproportional to the weight of the language in the Futa Jalon. If anything were to be done for a revitalization of Jalonke, it should be aimed at the language in all its varieties – something not feasible in the near future in the absence of a linguistic survey of the different dialects and a subsequent standardization.

Still, in a rural community, small means can have a big impact. A primer developed by me together with Adama Camara and Erhard Voeltz, although unlikely to be used in literacy classes, has been distributed widely. A stage-play written and

¹³ *On my suggestion that I might teach Jalonke literacy classes, I was urged to teach English instead, a clear indication that the Jalonke population will not actively ask for any language program involving their language, because of its low sociolinguistic status.*

INTRODUCTION

performed in Jalonke with young people has created a new tradition of plays in Jalonke accompanying official events. Some of the younger consultants, trained in the orthography devised for the language, have started to collect historical narratives, and one of them, to write letters in Jalonke. In the long run, these results triggered by a newly gained conscience of one's ethnic and linguistic identity will certainly not reverse a long existing tendency towards language shift. But at least on a small scale, they have a positive effect on language attitude.

1.7. THEORETICAL FRAMEWORK

It is the purpose of this section to introduce the specific theoretical concepts that are used throughout the study to inform the semantic analysis of verbs. Theoretical assumptions that are only relevant to well delimited parts of the thesis will be introduced where needed. The theoretical notions presented here are concerned with the structuring of the lexical meaning of verbs and with additional levels of information that influence, complement, or alter the lexical meaning and the syntactic realization of verbs. After a cursory survey of the phenomena of importance for specifying lexical meaning and its interaction with syntax in section 1.7.1, section 1.7.2 spells out the assumptions made about levels of grammatical information for verbs in more detail. The different subsections of 1.7.2 focus on temporal properties (1.7.2.1), propose a decomposition approach to lexically specified meaning components (1.7.2.2), and show how lexical meaning components partially determine the participant structure (1.7.2.3). Additional subsections outline how participants are projected into the syntax, and introduce morphosyntactic and morpholexical operations (1.7.2.4). Section 1.7.2.5 introduces semantic frames as an additional level of conceptual information.

1.7.1. WHAT'S IN A VERB?

Verbs can appear in the same syntactic environments and still differ crucially in their lexical semantic representations. In (1) and (2), the subject arguments of the respective verbs bear different thematic roles – the subject of (1) is a Theme, or the entity undergoing the eventuality denoted by the verb. The subject of (2) is an Effector (Holisky 1987, Van Valin & Wilkins 1996), or the entity bringing about the eventuality denoted by the verb (see 1.7.2.3 for a discussion of thematic roles).

- (1) The waste-paper basket burned up.
- (2) Frank ate.

CHAPTER 1

Moreover, verbs can map their participants onto different grammatical relations. Consider (1): it can have a transitive counterpart (*Friederike burned up the wastepaper basket*), in which the Theme subject of (1) bears an object relation to the verb. The verb *burn up* participates in the ‘causative/inchoative alternation’ (Levin 1993). In contrast, the single argument of (2) maintains the subject relation to the verb in two-place-use (*Frank ate two kroketjes*) – the verb participates in the ‘unexpressed object alternation’ (Levin 1993). A further contrast to be noted lies in the different aspectual interpretations for the two syntactic configurations of *eat*, but not for those of *burn up*. *Eat* receives an atelic interpretation when no Theme argument is present or when this Theme argument is not ‘quantized’ (Krifka 1989), as in *Frank ate kroketjes*, but a telic interpretation when a quantized Theme is present, as in *Frank ate two kroketjes*. The interpretation of *burn up* as telic is independent of properties of its Theme argument (cf. Krifka 1989, 1998, Verkuyl 1972, 1993). A theory of argument structure should be able to account for these and other differences.

In addition, the differences in behavior sketched above are not limited to single verbs, but allow identifying coherent verb classes. For example, the verbs that like *burn* in (1) participate in the causative/inchoative alternation are generally characterized as verbs of change of state (cf. Jespersen 1927, Smith 1978, Levin 1993, *inter alia*). Yet, not all verbs of change of state undergo the alternation, for example verbs of destroying and killing do not (Levin 1993). Similarly, not all verbs of state change alternate between an atelic and a telic interpretation in the way *eat* does.

A large number of syntactic configurations for verbs is the rule rather than the exception, at least in English (see Goldberg 1995, Levin 1993, Rappaport Hovav & Levin 1998, and Ruhl 1989, *inter alia*). The question is which criteria license and restrict the occurrence of a given verb in different contexts, and whether they are semantic or syntactic criteria.¹⁴ A related question further complicating the issue is to what extent the relevant criteria make reference to the verb and to what extent they refer to the construction in which the verb appears. Two examples may serve to illustrate the problem: Hale and Keyser (1987) report that depending on the different assumptions speakers make about the meaning of *gally*, an archaic whaling

¹⁴ This issue is particularly raised in the literature on language acquisition (Pinker 1989, Gleitman 1990, Naigles 1990, etc.). There, it is hotly debated whether the semantics of the verb enable the child to acquire its argument structure (“semantic bootstrapping”) or whether on the contrary the number and nature of arguments a verb appears with allow inferences about its meaning (“syntactic bootstrapping”).

INTRODUCTION

term synchronically opaque to most speakers, they attribute different syntactic behavior to the verb. Speakers who take *gally*, as in (3), to mean ‘see’ will not allow the middle alternation *Whales gally easily*.

(3) They gallied the whales.

(Hale & Keyser 1987: 2)

To speakers who interpret *gally* as ‘frighten’, on the other hand, the middle alternation is perfectly acceptable. From this example, it seems evident that verb meaning plays an important role in determining verb behavior. Goldberg (1995) gives an example that also establishes meaning as a key to interpretation, but locates the meaning at the constructional level rather than at the verb level. Out of ten consultants who were asked what the verb in sentence (4) meant, a full six responded with *give*.

(4) She topamased him something.

(Goldberg 1995: 35)

According to Goldberg, this judgment is not due to the frequency of *give*, since other verbs are more frequent in the ditransitive construction, but due to *give* being the most prototypical ditransitive verb because its lexical semantics is very closely matched with the construction’s ‘transfer’ semantics.

The findings outlined above point to the existence of classes of verbs within languages that can be distinguished by their argument structures. These argument structures are expected to follow from semantic features shared by verbs of a given argument structure class; and further meaning components are expected to yield subclasses within the argument structure classes. The central questions are thus the following: what semantic features or meaning components determine a verb’s membership in a particular class? And are these features located at the lexical or the constructional level? Different scholars have argued for different types of meaning components triggering class membership, and these proposals will be taken up in detail in the following sections.

Of equal importance are the demonstrable differences across languages in the factors underlying argument structure classes – some of these differences will be addressed throughout this study. Here, some examples may suffice to illustrate cross-linguistic variability in the domain of argument structure:

CHAPTER 1

- Essegbey (1999) describes for Ewe how verbs denoting inherently directed motion, bodily processes and cries and movement have an intransitive argument structure when the events are construed as uncontrolled by their subject participant, but a transitive argument structure when they are construed as controlled by their subject participants.
- Levin & Rappaport Hovav (1995: 159) mention seeming translation equivalents of verbs that can be shown to have subtle differences in meaning in different languages which can be diagnosed through their different syntactic ranges. Thus, they show that English *blush* allows both stative and state-change readings, while Italian *arrossire* ‘blush’ only lends itself to state-change readings. Both *blush* and *arrossire*, however, have to be overtly causativized in order to appear in transitive clauses.
- Merlan (1985) shows that verbs of a comparable semantic domain – verbs of bodily functions – mostly realized as unergative intransitive verbs in English, although mostly assigned an intransitive argument structure, differ with respect to being unergative vs. unaccusative verbs in a group of Amerindian languages.
- Stassen (1997) shows how languages differ in realizing the domain of intransitive predication. What is expressed through intransitive verbs in some languages can also be expressed through strategies involving predicate nominals, predicative adjectives, or locational predicates.
- Talmy (1985, 2000) investigates systematic differences across languages with respect to the lexicalization of motion events in verbs. In satellite-framed languages such as most Germanic languages, for instance, most verbs of manner of motion like *roll* can appear with a Path phrase (*The ball rolled into the cave*) and hence express a change of location and the manner in which it occurred. In many verb-framed languages such as Jalonke, verbs of manner of motion cannot be combined with Path phrases but only modify verbs of directed motion (*The ball entered the cave rolling*) – in these languages, most, if not all, verbs of manner of motion never express change of location and consequently have different temporal and participant structure properties.
- Van Valin & LaPolla (1997: 87-89) report that Lakhota verbs of breaking can be distinguished according to whether they allow Instrument subjects or not, always possible for the English translational equivalent of these verbs, such as *break*. Moreover, Lakhota verbs of breaking do not participate in the causative/inchoative alternation, in contrast to English *break*, but always have to syntactically express their external cause argument.

INTRODUCTION

- And finally, Wilkins (in prep.) draws attention to the fact that the Arrernte verb ‘see’ has three obligatory arguments, corresponding to the Effector, the Theme, and the Location of the action of seeing.

In view of these cross-linguistically attested differences, I attempt to provide some further empirical evidence necessary in order to address the question of what is universal and what must be considered language-particular in the factors that determine argument structure class membership.

The assumptions adopted in this thesis about the amount of information contained in lexical semantic representations of verbs and the interaction of lexical, constructional and pragmatic aspects of meaning are presented in the following sections. It is argued that syntactically relevant components of verb meaning come about through the contribution of different levels of information interacting in the linguistic coding of **events**. Following Davidson (1967) (cf. also Bohnemeyer 2001) I understand events as non-linguistic entities¹⁵ whose conceptualizations in a simplified way represent situations in the real world. Events in this sense correspond to what are called ‘situations’ by e.g. Barwise & Perry (1983), Lyons (1977), and Smith (1991) and ‘states of affairs’ by Van Valin & LaPolla (1997).¹⁶ Event types are lexicalized in predicates (Davidson 1967, Parsons 1990), specifically in verbs, but they are not coded by verbs alone but by the construction in which the verb appears. Further, the temporal properties of a verb may be altered by properties of these constructions. **Lexical aspect** is used here as a cover term for the properties of dynamicity, durativity, and telicity, introduced below, which determine in interaction between features of the verb and its participants the temporal characteristics of event descriptions. Moreover, event descriptions are characterized by a **participant structure**, or a set of thematic roles. A further information structure, the **argument structure**, specifies to which arguments the semantic participants of

¹⁵ As Casati (2002: 8) remarks on events from a philosophical perspective, “[o]ne could take the massive indeterminacy that seems to surround the existence and identity issues to be evidence that systematic theorizing about events is impossible. On the other hand, it is not clear that the indeterminacy is any worse in the case of events than in the case of objects, and we seem able to theorize in a systematic fashion about them [Lombard 1998]. If that is right, then the indeterminacy in our event concept would seem to be no fatal hindrance to the development of systematic theorizing about them.” (See also Casati & Varzi 1996.)

¹⁶ Smith (1991) uses ‘event’ for dynamic situations (Vendler’s activities, accomplishments and achievements, see below). In Van Valin & LaPolla’s (1997) use of the term, events only comprise Vendlerian achievements.

CHAPTER 1

events are projected in the syntax. Those meaning components of a predicate that are lexically coded form a predicate's **event structure**. Conceptually, related classes of events are linked through shared **semantic frames** (Fillmore 1971, 1977, etc.). Differences in profiling (Langacker 1987, 1991) on those frames can account for differences and commonalities at the levels of participant and argument structure. There are mutual dependencies and partial determinations between the event structure and the separate levels of lexical aspect, participant structure, argument structure, and the semantic frames a given predicate evokes.

1.7.2. LEVELS OF INFORMATION

The following sections look closer at the different levels of information structure assumed in this thesis. Since there is a considerable body of literature on the type of information contained in verbs or verbs and their arguments, and since a catalogue of the relevant parameters as well as their location at the lexical vs. the clausal level is still a matter of controversy, different proposals will be presented and their advantages and limitations will be discussed before I identify those parameters that I adopt in this thesis – presented with respect to event structure templates at the end of 1.7.2.2.4, and with respect to all levels of information structure and the parameters relevant for them in 1.7.3.

1.7.2.1. LEXICAL ASPECT

Lexical aspect, also known under the label of *Aktionsart*, is, following Comrie (1976: 6), taken to comprise information relating to the temporal contour of an event description. Although suggesting through the choice of label that it concerns only the temporal information **lexicalized in verbs**, lexical aspect, as noted early on, is crucially intertwined with the number and other properties of a verb's arguments, as discussed in detail below. The label 'lexical aspect' may therefore seem incongruous for an information structure that is partly determined by the verb and partly comes about compositionally through the interaction of properties of the verb and properties of its arguments. Although the totality of temporal properties distinguishing different types of events might therefore better be termed 'lexical and clausal aspect', the label 'lexical aspect' is retained here because it is the most common cover term for the parameters stativity vs. dynamicity, telicity vs. atelicity, and punctuality vs. durativity, even for approaches that do not take all of them to be lexically specified.

Lexical aspect has had considerable attention from philosophers and linguists over the last half of the 20th century. Starting with Vendler's (1957, 1967) path-breaking

INTRODUCTION

inquiry into temporal properties of verbs,¹⁷ subsequent studies by Dowty (1979, 1991), Krifka (1989, 1992, 1998), and Verkuyl (1972, 1993), among many others, have drawn on distinctions like the following:

- (5) Felix read (for hours/*in ten days).
- (6) Felix read my whole thesis (in ten days/*for hours).

The duration-completion test (*for* vs. *in*), one of the diagnostics suggested by Vendler to distinguish verbs with different aspectual properties, qualifies *read* in (5) as atelic, that is, as encoding an event without a ‘set terminal point’. *Read* in (6) on the other hand is interpreted as telic, that is, as encoding an event that proceeds towards a natural endpoint (Smith 1991). Atelic event descriptions are homogenous (Vendler 1957, 1967), or additive (Verkuyl 1993): the subparts of an event like *drink wine* are events of *drinking wine*. For instance, if somebody is interrupted drinking wine, it can be said that (s)he has drunk wine (cf. Dowty 1979, Vendler 1957, 1967). Telic event descriptions, on the other hand, are not homogenous, but quantized (Krifka 1989). They crucially involve change through time. None of their subparts can correspond to the event as a whole, and consequently, the only admissible answer to the question ‘When Loretta is interrupted drinking a glass of wine, has she drunk it?’ is ‘no’.

Vendler’s ‘time schemata for verbs’ remain, although modified and adjusted in later research, the foundation for all the following treatments of aspectual distinctions. Vendler’s classification is based on a broad bifurcation of verbs: they denote either processes that go on in time or processes that do not go on in time. Processes that go on in time either consist of homogeneous phases and in this case are ‘activities’. Alternatively, processes that go on in time “proceed towards a terminus which is logically necessary to their being what they are” (1967: 101), and in this case are ‘accomplishments’. Processes that do not go on in time can be predicated with respect to periods or instants of time. If these processes hold for periods in time, they are ‘states’. If these processes can only be predicated for a moment in time, they are ‘achievements’. Vendler’s four classes can be defined by the three binary features of stativity vs. dynamicity, telicity vs. atelicity, and punctuality vs. durativity. Following Smith (1991: 30) and Van Valin & LaPolla (1997: 93), the four classes are characterized as follows:

¹⁷ Vendler’s work in turn draws on earlier treatments (see Dowty 1979: 51-55 for a useful overview) that cannot be covered here.

CHAPTER 1

Table 2: Characterization of Vendler's four classes in terms of three binary features

State	[+static]	[-telic]	[-punctual]
Activity	[-static]	[-telic]	[-punctual]
Accomplishment	[-static]	[+telic]	[-punctual]
Achievement	[-static]	[+telic]	[+punctual]

The examples above have shown that the lexical aspectual properties of predicates interact with properties of their arguments. This problem has been addressed most exhaustively by Verkuyl (1972, 1993). Verkuyl notes that aspectual properties of verbs do not always come about as lexical properties of the verbs. Consider examples (7)-(10). For *eat*, but not for *crave*, the verb's aspectual properties depend on compositional features of the clause in which it appears, such as the absence or presence of quantification, specificity or definiteness.

- (7) Sonja ate carrots (*a carrot) for hours.
- (8) Sonja ate a kilo of carrots (*for hours).
- (9) Sonja craved carrots for hours.
- (10) Sonja craved a kilo of carrots for hours.

Dowty (1991) and Krifka (1987, 1989) propose an account of why bare plurals and mass term arguments can yield an atelic interpretation for sentences containing an otherwise telic predicate. Dowty and Krifka's solution to Verkuyl's puzzle is to introduce a thematic role called 'Incremental Theme' by Dowty. Dowty and Krifka assume a 'homomorphic mapping' of the parts of the Incremental Theme that undergo the change onto the parts of the change event. Homomorphism means that the Theme denotation (*a kilo of carrots* in the case of (8)) is mapped onto an event of *eating*, and that the subparts of *a kilo of carrots* are mapped onto subevents of eating. None of the subparts of *eating a kilo of carrots* fall under the description of *a kilo of carrots*, and hence no subevent of *eating a kilo of carrots* corresponds to the whole event. Therefore, *eat a kilo of carrots* is a telic event description. Telicity is associated with the property of 'quantizedness', which applies to the event predicate and the Theme argument alike. *A kilo of carrots* is quantized, and so is *eat a kilo of carrots*. The same mapping principles apply to atelic predicates, such as *eat carrots* in (7). Just like an entity denoted by *carrots* has parts that also fall under the description of *carrots*, so the event denoted by *eat carrots* has parts that fall under the same event description. Neither the Theme argument nor the event predicate are quantized; in fact, due to the homomorphism of mapping, it is the

INTRODUCTION

lack of quantizedness of the Theme argument that is responsible for the atelicity of the event predicate. Conversely, an entity denoted by *a kilo of carrots* has no proper part that falls under the same description. Following Dowty, Krifka, and Verkuyl, telicity may therefore be determined compositionally by the interaction of a property encoded in the verb, namely that of state change, and the quantizedness of its Theme argument.

But not all predicates are telic when their Theme argument is quantized. This concerns in particular a class of verbs labeled ‘degree achievements’ by Dowty (1979). These verbs – such as English *darken* or *grow* – would be classified as activities on Vendler’s account, even though they denote state changes just like basic lexical accomplishments and achievements on Dowty’s (1979) decompositional account. The problem of degree achievements lies in the absence of a discrete change of state in their lexical semantics. Consequently, they have no result state that is incompatible with the source state as long as the result state still holds. To appreciate this point, consider (11). The result state of the application being written is logically incompatible with the source state of it not being written.

(11) Loretta wrote her application in one hour.

(12) My mood has darkened for hours.

In contrast, my mood can have darkened, as in (12), and still continue darkening. As a consequence, *darken* is interpreted as atelic. In contrast to Incremental Theme verbs such as *eat*, degree achievements receive a telic interpretation not when their Theme is quantized but when a degree of change is specified (*My mood darkened totally in the course of thesis writing*). A subgroup of the verbs of inherently directed motion are the “motional counterparts of the degree achievements” (Rappaport Hovav & Levin 2000: 292). These verbs – for instance *rise* and *fall* – also only entail change in a particular direction (*The water level had risen and continued rising*) and no discrete end state unless a degree of change is specified (*The water level rose by five centimeters*). In order to account for the syntactic similarities of all verbs of ‘directed change’, regardless of whether they are Incremental Theme verbs, degree achievements, or verbs of inherently directed motion, Rappaport Hovav & Levin (2000) discard the notion of telicity as a property of verbs. According to them, at the level of event structure, only the distinction between states, activities or processes, and ‘directed change’ (of state) is encoded. Kennedy and Levin (2001) formalize the property of directed change by introducing a syntactically optional ‘degree of change’ (of state) argument for all verbs of incremental

CHAPTER 1

change. Telicity, then, is determined by the interaction between the verb, the degree of change argument, and the Theme argument.

An issue that remains unresolved is the possibility of a durative interpretation under certain circumstances for what would otherwise be achievements or punctual state changes (to give an example already noted by Vendler (1967: 104): *It took the battalion twenty minutes to cross the border*). In analogy to Rappaport Hovav & Levin and Kennedy & Levin's solution to the telicity issue, Bohnemeyer (2001, 2004) suggests taking the burden of the coding of durativity vs. punctuality off the lexical semantic representation of verbs. Just as with telicity, this feature is relocated to the clausal level where it compositionally specifies the durativity of an event. A different solution to the problem of achievements that can have durative interpretations is put forward by Van Valin & LaPolla (1997). They suggest that achievements are characterized by the marked, specific feature [+punctual] while accomplishments receive the unmarked feature [-punctual]. Non-punctual verbs receive a durative interpretation per default, but can optionally be interpreted as punctual. On this account, many classical achievements like *freeze* or *arrive* are analyzed as accomplishments. The temporal and causal properties of achievements clearly require further research. In the meantime, I adopt the compositional approach suggested by Bohnemeyer (2001, 2004). If telicity vs. atelicity and punctuality vs. durativity are relegated to the clausal level, the result are fewer lexical event structure classes lexically specified for verbs, with only the two features [+/-static] and [+/-change] (of state) differentiating them, as illustrated in Table 3. A more fine-grained temporal decomposition, as presented in Table 2 above, consequently applies to the clausal, rather than to the lexical level.

Table 3: Characterization of verbs in terms of two binary features, following Bohnemeyer (2001, 2004) and Kennedy & Levin (2001)

State	[+static]	[-change]
Activity	[-static]	[-change]
Change of state	[-static]	[+change]

As discussed in the following section, the shift of the features telicity vs. atelicity and durativity vs. punctuality away from the predicate and towards the clause has important consequences for the amount of information present in the event structure of verbs.

INTRODUCTION

1.7.2.2. *EVENT STRUCTURE*

Most recent approaches to argument structure and linking assume that properties of the lexical semantic representation or the **event structure** of verbs are responsible for the default expression of arguments in the syntax. With theorists such as Foley & Van Valin (1984), Jackendoff (1990), Grimshaw (1990), and Dowty (1991), I share the assumption that the information that determines grammatically relevant aspects of meaning is contained in the lexicon. An event structure is thus defined here as the temporal and causal information stored in a verb together with its lexical meaning.

The features that trigger the syntactic frames of verbs are given either as a listing of the semantic roles of the participants (Fillmore 1968) or as a more elaborate predicate decomposition (Dowty 1979, Foley & Van Valin 1984, Goldberg 1995, Gruber 1965, Van Valin & LaPolla 1997 *inter alia*). A **predicate decomposition** contains not only information about the participants, but also information about a verb's event structure. This event structure is schematized in terms of a limited number of primitive predicates (see Levin 1995 for a discussion of the advantages of the decomposition approach).

The predicate decomposition chosen here is the one proposed by Rappaport Hovav & Levin (1998). Having noticed the widespread variation in number and syntactic type of arguments for verbs sharing the same name, Rappaport Hovav & Levin suggest that verb meanings are built up in a monotonic fashion. That is, while elements can be added, no basic element of meaning can be removed from a verb by syntactic processes. Further, they posit a closed set of 'event structure templates' defined for individual languages, in which the idiosyncratic meaning of a particular verb is represented by a **constant**, and the structural aspect of its meaning by the primitive predicates of the **template**. The existence of derived verb meanings, then, is attributed to 'template augmentation'. **Template augmentation** is principled: it can only create meanings compatible with the basic template inventory; and it is based on the constraints that each subevent and each argument in the event structure must be syntactically expressed, at least as far as 'structure participants', that is, participants that are assigned open thematic roles by the template, are concerned. The basic event structure templates they assume are given below for the different Vendlerian lexical aspects.¹⁸

¹⁸ According to Rappaport Hovav & Levin's conventions, italicized words in angle brackets (e.g. <MANNER>) represent the constant, i.e. the idiosyncratic component of meaning. This part of meaning distinguishes verbs from other verbs that have the same struc-

CHAPTER 1

- | | | |
|------|---|------------------|
| (13) | [x ACT _{<MANNER>}] | (activity) |
| (14) | [x _{<STATE>}] | (state) |
| (15) | [BECOME [X _{<STATE>}]] | (achievement) |
| (16) | [[x ACT _{<MANNER>}] CAUSE [BECOME [y _{<STATE>}]]] | (accomplishment) |
| (17) | [x CAUSE [BECOME [y _{<STATE>}]]] | (accomplishment) |
- (Rappaport Hovav & Levin 1998: 108)

These templates translate Vendler's aspectual classes into characterizations based on causality (and, in the case of Rappaport Hovav & Levin 1998 on the presence of so-called manner components of meaning).

As remarked by Bohnemeyer (2001, 2004), the question arises whether the Vendlerian aspectual classes and the predicate decomposition based on causal features, which are intensionally very different, at least happen to be extensionally equivalent. The answer to this question, as widely observed (Kennedy & Levin 2001, Levin & Rappaport Hovav 1995, Rappaport Hovav & Levin 2000, Van Valin & LaPolla 1997), is no. The 'mismatches', as Bohnemeyer calls them, between the two approaches, have their origin in the problematic anchoring of telicity vs. atelicity and punctuality vs. durativity at the lexical level already mentioned in the preceding section. To start with the first group of mismatches, they concern Incremental Theme verbs, degree achievements and verbs of inherently directed motion. According to the decomposition approach, these verbs remain predicates of change of state or location, even if their Theme argument is not quantized or no degree of change is specified. On the aspectual account, however, they qualify as activities under the same conditions. The second group of mismatches concerns the accomplishment-achievement distinction. Achievements are characterized by punctuality in the aspectual framework, but by lack of causality in most decomposition approaches.¹⁹ Durativity is independent of causality, though, since there are uncaused

tura,; i.e. grammatically relevant, aspects of meaning. The distinction between constant and structural meaning seems reminiscent of Katz & Fodor's (1963) 'distinguishers' and 'markers'. Yet it is different in that it does not attempt an exhaustive semantic classification, but merely a distinction between parts of meaning that are grammatically relevant, and those that are not. The distinction between structural and idiosyncratic or constant components of meaning, although often couched in different terms, is recognized by many researchers on the syntax-semantics interface, cf. Goldberg (1995), Grimshaw (1990), Pinker 1989), Van Valin & LaPolla (1997).

¹⁹ An exception are Van Valin & LaPolla (1997, chapter 3), who assume causative counterparts for all the 'Aktionsart classes' they distinguish.

INTRODUCTION

durative state-changes such as *grow up* or *recover* (Bohnemeyer 2001: 13-19) which receive a conflicting classification depending on the criterion that is used: they would qualify as achievements on the decomposition account, but as accomplishments on the aspectual account. Likewise, causative punctual verbs of change of state also can be qualified either as causative state changes in an account based on causality, or as achievements in an account based on punctuality vs. durativity.

The solutions to these mismatches, proposed with respect to telicity in the most recent work of Rappaport Hovav & Levin (2000) and Kennedy & Levin (2002), and with respect to punctuality in Bohnemeyer (2004) are the following. Neither telicity nor punctuality features are stored in a verb's event structure. Rather, these features are compositionally contributed by the clause. Only the features of dynamicity vs. stativity and the presence vs. absence of a change of state are determined at the lexical level. With respect to the decompositions put forward by Rappaport Hovav & Levin (1998), the aspectual labels – on the view defended here misleading – for the event structure templates in (13)-(17) should be ignored on my account. Rather, according to my understanding, the templates should be classified, in line with Rappaport Hovav & Levin's intention, in terms of state vs. state change, presence vs. absence of a manner component, and presence vs. absence of an external cause subevent. Rappaport & Levin's templates would then be characterized by the following features:

Table 4: Characterization of event structure templates in terms of the features [+/-external cause], [+/-static], [+/-manner] component, and [+/-change of state] (adapted from Rappaport Hovav & Levin (1998: 108))

Event structure template	Features				Label used in thesis
[x <STATE>]	[-cause]	[+static]	[-change]	[-manner]	stative verb
[x ACT <MANNER>]	[-cause]	[-static]	[-change]	[+manner]	manner verb
[BECOME [X <STATE>]]	[-cause]	[-static]	[+change]	[-manner]	result verb
[[x ACT <MANNER>] CAUSE [BECOME [y <STATE>]]]	[+cause]	[-static]	[+change]	[+manner]	manner-with-result verb
[x CAUSE [BECOME [y <STATE>]]]	[+cause]	[-static]	[+change]	[-manner]	externally caused result verb

CHAPTER 1

English examples for each template are given below:

- (18) Sonja loves dark chocolate.
- (19) Juergen yawned.
- (20) The Fachbeirat members came into the conference room.
- (21) Birgit chopped the vegetables.
- (22) Loretta cooked the pasta.

Just as with Vendler's aspectual classes, we find a basic partition between states and dynamic verbs. Among dynamic verbs, two features yield different event structures. The first distinguishing feature is the presence or absence of manner in the lexical semantics of a verb. Pure 'manner verbs' like *sweep*, *run* or *laugh* lexicalize the manner in which the action denoted by the verb is performed and do not denote a change of state. Pure state change verbs such as *break*, *open*, and *come*, which only code the result of the action denoted by the verb, without committing themselves to the manner in which that result state was achieved, are called 'result verbs'. The presence or absence of a manner component in an event structure template is related to the complexity of the event denoted by the verb, and to its causal status – the second relevant feature. Manner verbs in their basic lexical semantic representation do not code a change of state. Consequently, these verbs denote simple events, because the absence of a change of state excludes the possibility of a subevent that causes this change of state, at least on Rappaport Hovav & Levin's account based on English. Nevertheless, manner templates can be expanded to change of state templates through the addition of a change of state or change of location subevent²⁰ brought about by the activity. This expansion of a basic activity verb is often mirrored in greater syntactic complexity (*Terry swept* vs. *Terry swept the floor clean* (Rappaport Hovav & Levin 1998: 97). In addition, transitive manner verbs more often allow the suppression of their direct object than result verbs do (*Leslie swept* vs. **Kelly broke* (Rappaport Hovav & Levin 1998: 102). Often, transitive manner verbs only implicate change of state, but do not entail it (*Jürgen had washed the dishes, but there still was dirt on them*). If manner verbs entail a change of state, however, it is cross-linguistically predicted that they will be lexicalized in transitive-only verbs and not participate in the causative/inchoative alternation (Haspelmath 1993, Guerssel, Hale, Laughren, Levin & White Eagle 1985,

²⁰ Rappaport Hovav & Levin (1998) adopt the now widely shared view that events, not participants, cause events (Talmy 1976, 1988). If a participant alone instantiates the whole causing event, this is due to "metonymic clipping" (Van Valin & Wilkins 1996: 301).

INTRODUCTION

Levin 1993, Levin & Rappaport Hovav 1995). This expectation is based on the reasoning that a specific manner of bringing about a change of state implies an Instrument, and hence presupposes an Effector handling that Instrument. Result verbs inherently denote a change of state (**Loretta had cooked the pasta, but it was still uncooked*). This change of state is either associated with a simple event structure not containing a causing subevent or with a complex event structure containing a causing subevent. Verbs of change of state with a simple event structure do not lend themselves to an expansion by means of adding a causing subevent. This is reflected in their general inability to have causative variants (**The conductor arrived the train* (Rappaport Hovav & Levin 1998: 124)), although this expansion could logically be applied through template augmentation. Simple state changes, however, can be seen as an expansion of a state template to which a BECOME predicate was added. For complex state changes in their basic event structure (*Birgit broke the bowl*), Levin & Rappaport Hovav (1995) and Rappaport Hovav & Levin (1998) assume that they denote externally caused eventualities. The causing subevent of these complex state changes is not projected into the argument structure in certain cases (*The bowl broke*). On this analysis, causing subevents can be omitted from an event structure, but not added to it, or, to put it differently, only change of state/location subevents can be added to a template for verbs sharing a verb name.²¹ The differences among verbs of change of state are motivated through the distinction between them denoting **externally vs. internally caused** or **un-caused** eventualities. The concepts of externally, internally, and uncaused eventualities are properly introduced in the following sections.

1.7.2.2.1. VERBS DENOTING EXTERNALLY VS. INTERNALLY CAUSED EVENTS

Levin & Rappaport Hovav (1995) introduce the distinction between ‘internal’ and ‘external cause’ to account for the differences between verbs of change of state with a complex event structure and verbs of change of state with a simple event structure. This distinction is inspired by the notion of ‘control’ introduced by Smith (1978). Smith describes the difference between those intransitive verbs that have alternating causative uses and those that do not by ascribing to alternating

²¹ *The analysis of Levin & Rappaport Hovav (1995) and Rappaport Hovav & Levin (1998) contrasts with other analyses such as the one presented by Van Valin & LaPolla (1997:110). These authors regard the state reading of complex change of state predicates (The milk is cool) as basic. They explain the simple change of state predicate through an expansion of the state by adding a BECOME predicate (The milk cooled) and the complex change of state predicate through the expansion of the simple state change by means of a CAUSE predicate (The mother cooled the milk).*

CHAPTER 1

verbs the feature of external control, which corresponds to an external cause that brings about the event. Intransitive verbs that do not have alternating causative uses, in contrast, “can only be controlled by the person engaging” in the action. This internal control “cannot be relinquished” to an external controller (Smith 1978: 107), and hence a causative transitive use for these verbs is blocked. Levin & Rappaport Hovav observe that intransitive verbs that do not causativize code events that need not be under a participant’s own control (for instance *tremble*). Therefore, they suggest replacing the notion of internal control by the notion of ‘internal cause’, and the notion of external control by ‘external cause’. Note that verbs encoding externally caused events, or externally caused verbs in shorthand, on Levin & Rappaport Hovav’s account have a complex event structure consisting of a CAUSE predicate which modifies a BECOME predicate. Internally caused verbs in contrast **lack** a CAUSE element in their event structure. For internally caused eventualities, Levin & Rappaport Hovav state that

[...] some property inherent to the argument of the verb is “responsible” for bringing about the eventuality. For agentive verbs such as *play* and *speak*, this property is the will or volition of the agent who performs the activity. Thus, the concept of internal causation subsumes agency. However, an internally caused verb need not be agentive. For example, the verbs *blush* and *tremble*, which take animate – though nonagentive – arguments, can nevertheless be considered to describe internally caused eventualities, because these eventualities arise from internal properties of the arguments, typically an emotional reaction. These verbs, which do not participate in the causative alternation, also exemplify why the notion of control is inappropriate; neither trembling nor blushing is generally under a person’s own control [...]. (Levin & Rappaport Hovav 1995: 91)

Internally caused eventualities can also subsume verbs with inanimate single arguments, particularly verbs of emission such as *stink*, if they are conceptualized as triggered by inherent properties of their arguments. The opposite holds for externally caused eventualities, which Levin & Rappaport Hovav define in the following way:

[...] externally caused verbs by their very nature imply the existence of an “external cause” with immediate control over bringing about the eventuality described by the verb: an agent, an instrument, a natural force, or a circumstance. Thus, consider the verb *break*. Something breaks because of the existence of an external

INTRODUCTION

cause; something does not break solely because of its own properties [...]. Some externally caused verbs such as *break* can be used intransitively without the expression of an external cause, but, even when no cause is specified, our knowledge of the world tells us that the eventuality these verbs describe could not have happened without an external cause. We thus assume that the intransitive verbs that regularly have transitive causative uses are externally caused, and those intransitive verbs that do not are internally caused. (Levin & Rappaport Hovav 1995: 92f.)

Internally caused verbs name events “that come about naturally in an entity” (Rappaport Hovav & Levin 1998: 125), while externally caused verbs come about through a cause external to the concerned entity. The concepts of internal vs. external cause yield three possibilities for verbs: internally caused verbs (*Frank blushed*), externally caused verbs that always express their causing subevent (*Jürgen chopped the lamb*), and externally caused verbs whose cause element can be omitted (*Birgit broke the bowl* vs. *The bowl broke*).²² These different causation types are mirrored in basic argument structure. Internally caused verbs typically have an intransitive argument structure; all externally caused verbs are attested with a basic transitive argument structure; and only a subset of them allows intransitive uses. This subset of causative/inchoative alternating verbs is discussed exhaustively in chapter 5.

1.7.2.2.2. VERBS DENOTING UNCAUSED EVENTS

I adopt Levin & Rappaport Hovav’s dichotomy internally caused vs. externally caused, with one important difference. Instead of admitting internally caused verbs of change of state, as they do, I argue in favor of a third type of verb. I assume that there are verbs denoting uncaused eventualities, in order to account for certain intransitive verbs that are neither internally nor externally caused on my analysis (see also Bohnemeyer 2004). These verbs resemble the inchoative alternants of externally caused verbs, but do not have alternating transitive uses. In order to introduce verbs denoting uncaused eventualities, or ‘uncaused verbs’ in shorthand, I briefly return to Smith’s (1978) original definition of **internal control**. Internal control in Smith’s sense means that control over the verb action can only be exercised by the

²² It should be noted, however, that the features of internal vs. external causation lack independent diagnostics. The only phenomena that confirm the validity of the distinction of internal vs. external causation as the criterion underlying the syntactic differences between verbs are precisely the syntactic differences that are meant to be explained by them. These are the differences in the distribution of verbs in causative constructions. This leaves plausibility as the only criterion to judge the features.

CHAPTER 1

participant engaging in it. Consequently, for these verbs “causation can only be indirect, the transitive construction – which indicates direct causation – is ungrammatical” (Smith 1978: 107). Smith (1978) implicitly links internal control to selectional restrictions of the verbs in question to have only or typically animate participants. Levin & Rappaport Hovav (1995) extend their notion of internal cause, corresponding to Smith’s internal control, to certain intransitive verbs with inanimate participants. They also postulate strong selectional restrictions for these verbs, although the selectional restrictions they assume are not as tight as Smith’s. The stronger restrictions on the single arguments of internally caused verbs follow from the condition that “internal physical characteristics of their argument” (Levin & Rappaport Hovav 1995: 92) are seen as bringing about the eventualities denoted by the verb. Consequently, verbs analyzed as internally caused/controlled verbs by both Smith (1978) and Levin & Rappaport Hovav (1995), like English *shudder*, *blush*, or *tremble*, allow only a limited set of participants as their single argument. People, animals, and, under the appropriate interpretation, the earth and machines can *shudder* and *tremble*; and only people can *blush*, because the necessary properties are ascribed to them. In contrast, very different things, among them people, leaves, teacups, and furniture can be the subject argument of intransitive *shake* or the object argument of transitive *shake* – a clear hint that less special properties have to be inherent in the participant engaged in the verb action. This finding is supporting evidence for Levin & Rappaport Hovav (1995: 100) to analyze *shake* as an externally caused verb, hence as a verb with a basic transitive argument structure that can participate in the causative/inchoative alternation. The wider range of admitted participants alone cannot be a reason, though, to classify a verb as externally caused, if, as argued by Levin & Rappaport Hovav, external cause equals base transitive argument structure – English intransitive verbs of change of state like *deteriorate* allow a wide range of participants ranging from values to minds, roses, or conditions. Likewise unexpected on Levin & Rappaport Hovav’s account is that many transitive and hence necessarily externally caused verbs of change of state pose as strong restrictions on their object arguments as many intransitive and supposedly internally caused verbs do on their subject argument. Only hooved animals and wheels can be *shoed* and only thread can be *woven*, for instance. Levin & Rappaport Hovav (1995: 94) remark along the same lines that the Theme argument of an alternating externally caused verb like *break* also underlies strong restrictions, regardless of whether it is linked to object (of the causative alternant) or subject (of the inchoative alternant). They claim, however, that

INTRODUCTION

the appropriate comparison is between the external cause argument of an externally caused verb and the single argument of an internally caused verb. [...] This difference reflects the nature of internal causation, which involves causation initiated by, but also residing in, the single argument and hence dependent on its properties. In contrast, with externally caused verbs, the external cause argument gets the eventuality in motion, but is not necessarily involved in seeing it through. (Levin & Rappaport Hovav 1995: 94)

At the same time Levin & Rappaport Hovav concede that some – on their account – internally caused verbs of change of state such as *erode* or *rot* occasionally do occur in direct-causation contexts (in particular, heading transitive clauses):

the changes of state that they describe are inherent to the natural course of development of the entities that they are predicated of and do not need to be brought about by an external cause, **although occasionally they can be, and in such instances causative uses of these verbs are found.** (Levin & Rappaport Hovav 1995: 97, highlighting mine)

A corpus study conducted by McKoon & Macfarland (2000) calls for a revision of some of the assumptions on the arguments of supposedly internally and externally caused verbs of change of state made by Levin & Rappaport Hovav. McKoon & Macfarland investigate the syntactic environments and the selectional restrictions for verbs classified by Levin & Rappaport Hovav (1995) as internally and externally caused verbs of change of state. First, McKoon & Macfarland find that internally caused verbs of change of state can occur transitively in the corpus, and that some of them occur more often transitively than intransitively. In addition, they find that some externally caused verbs occur more often intransitively than others, and even more often intransitively than some internally caused verbs. Secondly, McKoon & Macfarland uncover no differences with respect to selectional restrictions on the Theme subjects of intransitive uses of these verbs that would distinguish between external and internal causation. Moreover, they report that there is no contrast between the two classes of verbs with respect to the kinds of Theme objects with which they appear if used transitively. The only confirmed distinction between internally and externally caused verbs, according to McKoon & Macfarland, lies in the ranges of entities that can appear as the external cause subject of transitive sentences – but only if a concrete entity changes state. If internally caused verbs are used transitively in these cases, they almost always have subjects denoting natural forces. For externally caused verbs, no such restriction on

CHAPTER 1

their transitive subject applies. The explanation behind these unequal ranges for transitive subjects, McKoon & Macfarland argue, is that natural forces are participants intrinsically involved in the change of state denoted by an internally caused verb, like water or wind are intrinsically involved in the action of eroding. Accordingly, only such intrinsically involved participants are admitted as the external cause arguments of internally caused verbs of change of state. For externally caused verbs, no such limitation is likely to apply. However, if an abstract entity changes state, no difference whatsoever between the subjects of transitive internally and externally caused verbs is evident. For these cases they note:

When an abstract entity is conceptualized as undergoing an internally caused change of state, almost anything can be construed as a contributing factor, inherent to the change-of-state process. Many things can be construed as being involved in *rotting the minds of the young*, ranging from natural substances to other people to behaviors. (McKoon & Macfarland 2000: 844)

Since both groups of verbs are equivalent in the range of entities they accept as Theme subjects or objects, though, the difference predicted by Levin & Rappaport Hovav – a limited set of Theme subjects for internally caused verbs, an unlimited set of external cause subjects for externally caused verbs – is not borne out. The corpus-based evidence on English limits the differences between internally and externally caused verbs to the allowed participant ranges for the transitive subjects of only those clauses featuring concrete entities as Theme objects. This finding leads me to the conclusion that the linguistic evidence is not strong enough to confirm the existence of internally caused verbs of change of state, as suggested by Levin & Rappaport Hovav. In other words, the contrast between internal and external causation is not sufficient in order to account for differences in basic argument structure for verbs of change of state. The contrast is especially weakened in light of the finding that the postulated alignment between causation type and argument structure class for internally caused verbs is not confirmed for English, the language investigated by Levin & Rappaport Hovav and in McKoon & Macfarland's corpus study. In the center of McKoon & Macfarland's investigation are a number of psycholinguistic experiments. The only difference uncovered by the authors, which according to them corresponds to the contrast between the postulated causation types can, however, be explained without relying on the contrast internal vs. external cause. McKoon & Macfarland find that sentences with externally caused verbs take significantly longer to be processed, regardless of their syntactic realization, than internally caused verbs. McKoon & Macfarland assume that this process-

INTRODUCTION

ing difference mirrors the differences in event structure complexity between externally and internally caused verbs: externally caused verbs have a complex event structure containing a CAUSE predicate that modifies a BECOME predicate. Internally caused verbs, in contrast, have a simple event structure containing only a BECOME predicate. It is, however, not necessary to conclude from McKoon & Macfarland's findings that the verbs of change of state with a simple event structure are indeed internally caused. On an account that regards these verbs as uncaused, they still have a simple event structure as their exclusive template (the problematic cases of causativized occurrences of these verbs, as revealed by McKoon & Macfarland, for an analysis of these English verbs as internally caused or uncaused notwithstanding). In contrast, for externally caused verbs that allow uncaused occurrences, there are two event structure templates that can become activated. Hence, the processing differences can be as successfully explained through the contrast uncaused vs. externally caused as through the contrast internally caused vs. externally caused.

1.7.2.2.3. LIKELIHOOD OF AN EVENT TO BE CONSTRUED AS UNCAUSED

In order to come up with an exhaustive explanation for the argument structure properties of intransitive verbs of change of state, I return to a second parameter developed by Smith (1978:101f.) along with the parameter of internal control. This second parameter is 'relative independence of the activity' or the likelihood of the activity to be construed without an external agent. I paraphrase Smith's term 'independence of the activity' as '**likelihood of the event to be construed as uncaused**'. Verbs denoting uncaused eventualities, or, in shorthand, uncaused verbs, comprise two classes in English: they cover the inchoative alternants of externally caused verbs that participate in the causative/inchoative alternation, but they also cover all other intransitive verbs of change of state. A question arising from this analysis is why there should be two syntactic options for uncaused verbs rather than one uniform characterization. I assume, in line with observations made by Croft (1990) and Haspelmath (1993), that if a verb is not internally caused, its probability of having an exclusively transitive argument structure, of participating in the causative/inchoative alternation, or of having a basic intransitive argument structure is cross-linguistically dependent on the "probability of an outside force bringing about the event" (Haspelmath 1993: 103). As in the case of internal causation verbs, this probability is not due to the nature of the event denoted by the verb in question alone. Rather, this probability is also a matter of a specific construal of an event chosen from the different possibilities of describing it. Haspelmath de-

CHAPTER 1

scribes the following scale of probability for an event to be viewed as instigated by an outside force:

Events such as freezing, drying, sinking, going out, and melting occur commonly in nature around us and do not need an agentive instigator. On the other hand, events such as splitting, breaking, closing, opening, gathering and connecting are typical of the kinds of things that human beings do. In both cases, the correlation is only typical, not necessary: Human agents may sink, extinguish, dry, melt and even freeze things, and things may split, break, close, gather, and even connect spontaneously, but this is much less likely and less typical.

While learning does not happen spontaneously in nature, it does commonly happen without an external teaching agent. Indeed, learning may be regarded as an agentive event itself, and in many languages the verb ‘learn’ is even transitive. An extreme case is ‘laugh’, which is so typically spontaneous that it is hardly ever expressed as an anticausative. (Haspelmath 1993: 103ff.)

The verbs towards the two end poles of the scale depicted by Haspelmath tend to be lexicalized across languages as transitive (‘wash’ or ‘decapitate’) and intransitive verbs (‘laugh’) respectively. The verbs in the middle of the scale (‘dry’, ‘melt’ or ‘freeze’) allow for variation both within and across languages with respect to the argument structure they are assigned (Nedjalkov 1969, Haspelmath 1993). For verbs like ‘melt’, there are two options available: they can have an event structure that focuses on the result state and only specifies a participant undergoing the change of state denoted by the verb – accordingly the verb will then have an intransitive argument structure. Or these verbs focus on the whole event and also specify a causing subevent – then, the verbs in question will lexically specify two subevents, and hence two argument positions and will, depending on the means of the language in question, be formally derived or undergo an alternation in order to suppress the external cause. It is moreover expected that the class membership of verbs like ‘melt’ is dependent on general lexicalization patterns of the language in terms of ‘fundamental transitivity’ (Nichols 1981, 1982, 1993, Nichols *et al* 1999). That is, languages are likely to have predictable cut-off points depending on whether their verbal lexicon is geared towards transitive verbs or intransitive verbs as the preferred input of valence-changing operations. Nevertheless, it is also to be expected that there are semantic motivations that allow more fine-grained predictions for verbs occupying the intermediate positions on Haspelmath’s scale if more

INTRODUCTION

cross-linguistic data are available. To formulate such predictions is, however, beyond the scope of the present study.

1.7.2.2.4. SUMMARY EVENT STRUCTURE

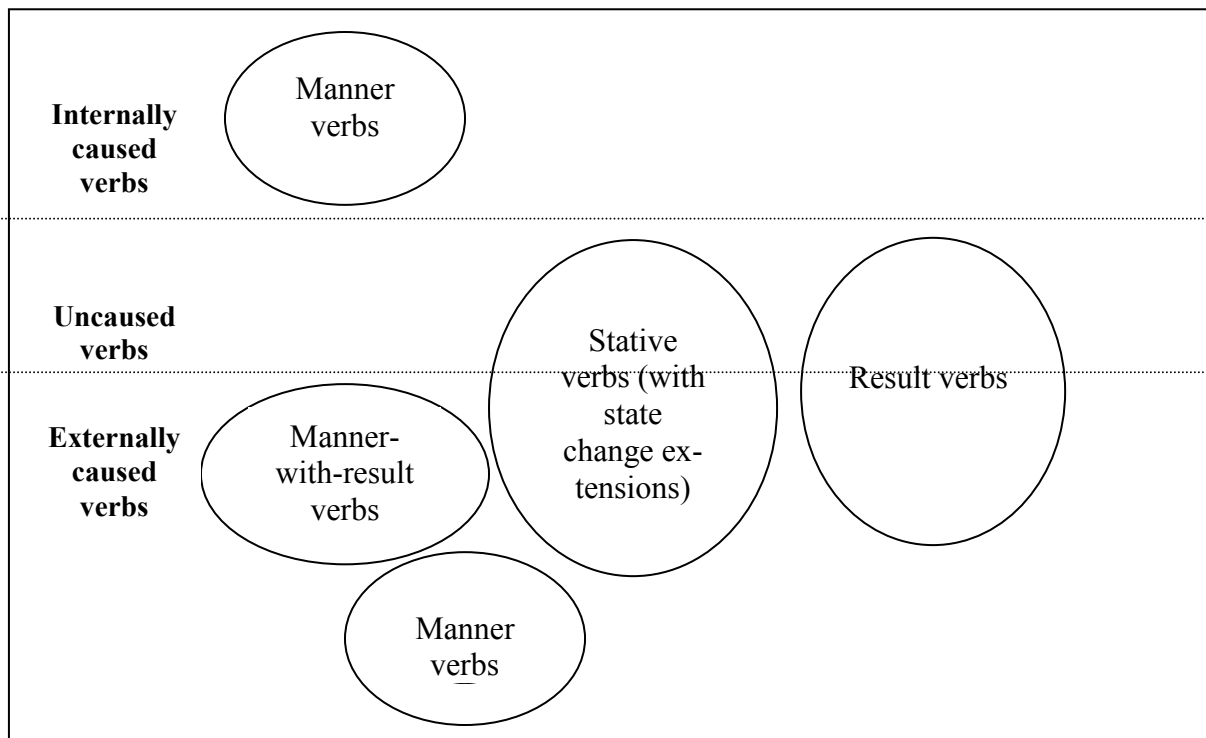
This study pursues a compositional approach to event structure. It is assumed that classes of verbs are characterized by sharing the same event structure, formalized in the form of event structure templates. In view of the scope of this study, no assumptions on the universal vs. language-specific character of these templates and of the primitives contained in them are made. It should be noted, however, that the templates adapted here from Rappaport Hovav and Levin's treatment of English resemble decompositions proposed in other frameworks, and that regardless of their formalizations, they are reflected in many cross-linguistic proposals of grammatically relevant components of meaning. Event structure templates characterize verbs in terms of presence vs. absence of a state change, an external cause element, and a manner component and in terms of dynamicity vs. stativity, as illustrated in Table 4 above. Event structure templates additionally specify the number of a verb's participants and whether they instigate or undergo a change of state. A further important difference is taken to be present with the distinction between internally caused, externally caused, and uncaused verbs. Contrary to Levin & Rappaport Hovav, I don't regard the evidence for verbs of change of state being internally caused in English as sufficient. Further, I do not see evidence for the existence of a class of internally caused verbs of change of state in Jalonke. It is an empirical question whether such verbs exist in languages, and by what criteria they can be defined. Therefore, a second feature is held to be responsible for verbs that have an intransitive argument structure although they cannot be seen as internally caused. This feature is whether these intransitive verbs are construed as denoting uncaused eventualities. United (and complemented by the likelihood of the event to be construed as uncaused, which in turn is fed by language-individual lexicalization preferences), the three features account for the membership of verbs with identical event structures in different argument structure classes: transitive-only verbs are verbs that are construed as externally caused and can never be viewed as uncaused. Intransitive-only verbs are verbs that are interpreted either as internally caused or uncaused, but can never be seen as externally caused. Causative-inchoative alternating verbs, finally, are verbs that allow both construals: they can be seen as externally caused and as uncaused (see Smith 1978: 108) for a similar analysis couched in different terms). It is also within the class of causative-inchoative verbs that an ambiguity between an externally caused and an uncaused reading is to be expected. The different causation patterns for internally caused,

CHAPTER 1

uncaused, and externally caused verbs are reflected in causative constructions. Internally caused verbs in many languages cannot causativize, but have to take a periphrastic or morphological causative (depending on the means of the language to encode causal relations), because the external causer has to affect the internal causer to set off the event (*I made Sonja laugh* vs. **I laughed Sonja*). Uncaused intransitive verbs may also occur with overt causativization; the meaning of these verbs in combination with the causative marker is, however, direct causation on most readings (Jalonke *N a ra-goro* ‘I took it down (lit.: 1SG 3SG CAUS-descend). Externally caused verbs, in contrast, are basic causative verbs whose external cause argument can be omitted under certain circumstances. That their transitive causative use is basic is supported by the observation that their intransitive counterparts are morphologically derived in many languages that have morphological means to flag anticausative derivation (French *J’ai cassé le verre* ‘I have broken the glass’ vs. *Le verre s’est cassé* ‘The glass broke’ with middle reflexive marking).

To summarize, the temporal event structure classes adopted in the present study and their interaction with causation types are the following.

Figure 2: Temporal event structure classes and their causation types in Jalonke



INTRODUCTION

1.7.2.3. PARTICIPANT STRUCTURE

Participant structure is understood here as an information structure at the clause level. The participant structure specifies all information pertaining to an event's participants. As stated in the preceding section, properties of the event structure partially determine the participant structure of the clause. Properties of participants can, but do not have to, be entailed in the event structure. A verb like *die* requires an animate Theme, whereas a verb like *put* requires an animate Effector, but leaves open the animacy of the Theme (see Van Valin & Wilkins (1996), Bohnemeyer (2004) for a discussion of these and similar cases). Thus, participant roles are generally underspecified at the level of event structure, and unless fully lexically specified for individual verbs only exhaustively spelled out through an interaction of noun phrase semantics, pragmatic inferences and verb meaning. Take for example the first argument of an ACT or CAUSE predicate as specified in the event structure. I call the role of this participant 'Effector', following Van Valin & Wilkins (1996), who elaborate on a concept introduced by Holisky (1987). An Effector is a role "which may under the appropriate circumstances be interpreted as an agent" at the level of participant structure or "in the context of the sentence as a whole" (Van Valin & Wilkins 1996: 319). Thus, the first argument of the verb *kill* in the sentence *Larry killed the deer* is an Effector in the verb's event structure representation – that it is further interpreted as an Agent at clausal participant structure is due to implicature. An Effector can also be conceptualized as an Agent (*Larry intentionally killed the deer*), a Force (*The explosion killed the deer*) or an Instrument (*The rock killed the deer*). Only very few verbs entail an Agent; an example of such a verb is *murder*, which is inadmissible with an inanimate, unintentional, involuntary Effector. Therefore, I assume that if a verb does not impose specific semantic restrictions on the arguments and adjuncts with which it is compatible, the participant structure comes about compositionally through the interaction of the verb's event structure and the arguments and adjuncts present in the clause.

So far, thematic roles have been presupposed but not properly defined. It is a general problem of theories of argument structure to come up with a universally applicable set of thematic roles that are not merely postulated (see Dowty 1991, Van Valin & Wilkins 1996, *inter alia*, for a discussion of this problem). It is beyond the scope of this study to propose such an inventory of thematic roles. Rather, inspired by Van Valin & LaPolla (1997: chapter 3), I postulate a set of thematic roles essential for the discussion of the Jalonke data in this study that is based on their syntac-

CHAPTER 1

tic reflection in default linking and do not commit myself to their cross-linguistic validity or language-internal exhaustiveness. The inventory proposed so far for Jalonke is summarized in Table 5.

Table 5: Inventory of thematic roles assumed for this study, definitions, and marking in default linking

Thematic role	Definition	Marking in default linking
Effector	Participant bringing about the eventuality denoted by the verb	Subject (marked through word order)
Agent	Participant volitionally and controlled bringing about the eventuality denoted by the verb	Subject (marked through word order)
Instrument	Participant acting under the control of an Effector in bringing about the eventuality denoted by the verb	Subject; PP headed by <i>ra</i> ‘with’
Theme	Participant being located or undergoing the eventuality denoted by the verb	Object (marked through word order)
Location (also differentiated into Source and Goal)	Location of the eventuality or, depending on the directional semantics of the verb, Source or Goal of the eventuality	PP headed by locative postpositions (see 2.7 for an inventory)
Beneficiary	Participant benefiting from the eventuality denoted by the verb	PP headed by <i>bε</i> ‘for’

1.7.2.4. ARGUMENT STRUCTURE

A major goal of this study is to classify the verbs of Jalonke according to what event structure, lexical aspect and participant structure representations are mapped onto what kinds of clause structures. To a significant extent this mapping is predictable on the basis of a verb’s event structure. The mapping from lexical semantic representation onto syntax is, however, not one-to-one – otherwise one would be unable to account for multiple syntactic realizations like voice alternations and argument structure alternations. For this reason, an intermediate level of information called **argument structure**²³ (cf. Jackendoff 1990, Grimshaw 1990, Bresnan

²³ *It is somewhat vacuous to address argument structure before having identified what is meant by the terms arguments and adjuncts. However, in the absence of any clear universal parameters defining argumenthood, I draw the distinction between arguments and ad-*

INTRODUCTION

2001 *inter alia*) is necessary. Argument structure is an information structure that only encodes information about the number of arguments, their syntactic status, and the hierarchical relations holding between them in order to project a verb's participants into syntax. The argument structure has access to a verb's event structure. Thus, as formulated by Sadler & Spencer (1998: 210), "it is the syntactic reflex of certain semantic properties". A 'thematic hierarchy' determines which participant of a two-place predicate has more 'Proto-Agent properties (Dowty 1991), is more 'prominent' (Grimshaw 1990), or more 'Actor-like' (Van Valin & LaPolla 1997). A verb like *murder* with the participant structure <Agent, Theme> will consequently link the Agent to subject, and the Theme to object. Accounts of unaccusativity that treat the phenomenon as syntax-based (see chapter 8 for an overview) often assume linking rules sensitive to different properties of participants, which are held responsible for the linking of these participants. Linking based on event and participant structure properties does not work straightforwardly in all cases, though. Verbs with supposedly identical participant structures like the notorious cases of English verbs of psychological state such as *frighten* (*Cockroaches frighten me*) and *fear* (*I fear cockroaches*) link their Experiencer participant (at least on accounts that assign the same thematic roles to the two verbs) to object in the case of *frighten*, but to subject in the case of *fear*. In order to account for cases where linking is shared with large classes of verbs, and for cases where it seems to depend on intricate differences in lexical semantics and concerns only small groups of verbs, it is useful to introduce a distinction between **'morpholexical' and 'morphosyntactic' operations** (Ackerman 1992, Sadler & Spencer 1998). The distinction draws on the level of information that is accessed by these operations:

The first 'meaning-changing' operation alters the semantic content of predicates, and we refer to such operations as 'morpholexical operations'. The second, 'meaning preserving' operation alters the syntactic manifestation of a given semantic representation, particularly the way that it is mapped on to grammatical relations. We will refer to these as 'morphosyntactic operations'. (Sadler & Spencer 1998: 208-9)

A morphosyntactic operation has only access to information present at the argument structure level and is blind to lexical semantics. What is a morphosyntactic operation is defined on a language-individual basis – according to Sadler &

junctions on the basis of language-particular properties of Jalonke and discuss the distinction in 2.2.3.

CHAPTER 1

Spencer, the English dative alternation and passive are instances of morphosyntactic operations. Consider the dative alternation:

- (23) Birgit gave a bottle of whisky to her supervisor.
- (24) Birgit gave me a fascinating book.

In (23), the ‘to-variant’ of the dative alternation, the Theme is linked to direct object, the animate Goal to indirect object. In (24), or the ‘double object variant’ of the dative alternation, the order of linking is inverted. The animate Goal (or Recipient in other terminological traditions) is linked to ‘primary object’ (Dryer 1986). The Theme, in contrast, is linked to ‘secondary object’ (Dryer 1986) (see section 4.6 for a discussion of linking strategies for three-participant events and the terms of primary and secondary object). Note that in both examples, the Effector is linked to subject. Since the dative alternation applies to all verbs of transfer with an identical participant structure, it is insensitive to specific lexical information of individual verbs and only refers to argument structure information. There are some morphophonological restrictions on the distribution of the dative alternation in English, i.e. verbs of Latinate origin do not allow the double object construction. Nevertheless, it is generally agreed (Levin 1993, Goldberg 1995, *inter alia*), that along with criteria of information structure identified as relevant for the information (Levin & Rappaport Hovav 2003, Bresnan & Nikitina, ms., *inter alia*), argument structure features play a role for the alternation: verbs in the double object construction have to have an animate Goal or Recipient, which is higher on the thematic hierarchy than a Theme.²⁴ An even more straightforward case for a morphosyntactic operation can be made for the English passive: just as for the dative alternation, its truth-conditional semantics remain constant in both syntactic configurations; and moreover, it is highly productive.

Morpholexical operations, on the other hand, are sensitive to individual semantic properties of verbs, such as their individual subcategorization frames and constant

²⁴ Note that Bresnan & Nikitina (ms.) generally question accounts based on lexical argument structure and alternations from it for English and suggest a probabilistic account framed in terms of tendencies as an alternative to a lexicalist account creating clear-cut expectations for the syntactic options of verbs. Their criticism of a lexicalist account is based on corpus data that show in many cases a greater range of syntactic frames for verbs than predicted by a lexicalist account. The data used by Bresnan & Nikitina to harden their claims, however, are in the great majority from web documents. Since it is therefore impossible to identify the authors of these documents and whether they are native speakers of English, their evidence is not taken into account here.

INTRODUCTION

information. As argued by Ackerman (1992), the locative alternation constitutes a morpholexical operation in Hungarian, and most probably also in English. The sentences (25) and (26), for instance, are not semantically equivalent. (26) entails that the box is ‘holistically affected’ (Fillmore 1968), whereas no such entailment is associated with (25).

(25) Jürgen packed books into the box.

(26) Jürgen packed the box with books.

In addition, the locative alternation concerns only verbs “related to putting substances on surfaces or things in containers, or to removing substances from surfaces or things from containers” (Levin 1993: 50). Thus, it is not triggered by argument structure properties, but by very specific lexical information.

The contrast between these two kinds of argument structure alternations or differences in argument-adjunct arrays for verbs have consequences for the issue of analyzing lexemes (taken in the sense of Cruse (1986: 49-50) to represent items stored in the lexicon) as monosemous vs. polysemous. The morphosyntactic operations among argument structure alternations instantiate different syntactic possibilities for one and the same lexical unit. These operations do not in any way affect the verb’s meaning, and clauses with the different arrays differ primarily in participant structure and discourse-pragmatic factors. Consequently, verbs participating in morphosyntactic operations are assumed to be monosemous in all their syntactic realizations. Morpholexical operations, in contrast, are argument structure alternations that do convey differences in the semantics of the event denoted depending on which array is chosen. In this case, I assume that the verbs that participate in such alternations are polysemous, that is, instances of different lexical units (Cruse 1986: 49-50).

To conclude, I assume that there is a level of information structure at the syntax-semantics interface called argument structure. The admission of an argument structure level receives support through the existence of two different kinds of operations with access to different levels of information. Morphosyntactic processes operate in a regular manner on all eligible verbs and do not alter their semantics. Morpholexical processes concern individual verbs or small groups of verbs, alter their semantics, and are sensitive to constant information and individual subcategorization frames.

CHAPTER 1

1.7.2.5. SEMANTIC FRAMES

The levels of information introduced so far account for many differences and commonalities between verbs or between different syntactic realizations of the same verbs. Nevertheless it is useful to consider a level of lexical information that is superimposed on but independent of thematic roles or the syntactic realization of arguments, namely that of ‘semantic frames’. Semantic frames go back to Fillmore (1971, 1977, 1982, Fillmore & Atkins 1992, Fillmore & Kay 1993), and have been operationalized in the concepts of ‘lexical profiling’ in Cognitive Grammar (Langacker 1991) and of ‘participant roles’ in Construction Grammar (Goldberg 1995). Frames encode cultural knowledge about events and their participant roles. In contrast to thematic roles (at least in default linking), semantic frames disregard the kind of perspectivization that comes with syntactic encoding. What constitutes a frame is a set of frame-level participant roles, along with all the necessary information about the typical behavior of the participants in the event. Semantic frames are crucial in order to account for commonalities between semantically related verbs which differ in other levels of lexical information. Consider the verbs *pay* (*I paid him the money*) and *buy* (*I bought the TV from him*). Intuitively, these verbs are semantically related, yet they exhibit syntactic differences. The verbs *buy* and *sell*, on the other hand, are syntactically equivalent and semantically related but still picture inverse flow of actions. Participant structure and argument structure alone cannot capture the semantic relatedness and account for the differences of these verbs. A semantic frame conceptually “structures the word-meaning and [...] the word ‘evokes’ the frame” (Fillmore 1982: 117). With respect to the verbs *pay*, *buy*, and *sell* or verbs of commercial transaction first characterized frame-semantically in Fillmore (1977), they can be argued to share a set of identical frame-semantic roles: a ‘buyer’, a ‘seller’, some ‘goods’ and ‘money’.²⁵ What sets the verbs apart is the focus or profiling (cf. Langacker 1987, 1991): *buy* centers on the action of the ‘buyer’ with respect to the ‘goods’, deprofiling the ‘seller’. *Sell* centers on the actions of the ‘seller’ with respect to the ‘goods’ and backgrounds the ‘buyer’; and in the foreground of *pay* are the ‘money’ and the ‘seller’ while the ‘goods’ are backgrounded. For the verb *give*, which taps into a transfer frame without exchange of money, this frame necessarily involves a ‘giver’, as well as a ‘receiver’, and the ‘gifts’ that are going to be transferred (Fillmore & Kay 1993: 4.13). Through presupposition of identical semantic frames, we can account for the intui-

²⁵ *In order to keep the different levels of lexical semantic representation and grammatical functions separate, I use the following typographic conventions: frame-semantic roles appear between single quotes (‘receiver’); thematic roles are given with initial capitals (Theme); and grammatical relations are written in normal font in lower case (subject).*

INTRODUCTION

tive commonalities between the participants of the verbs ‘give’ and ‘present’ in (27) and (28) irrespective of the differences in thematic roles and consequent syntactic alignment present.

(27) I gave the money to Loretta.

(28) I presented him with a book.

Thus, the frame-specific role of a participant does not completely determine its thematic role (Fillmore & Kay 1993: 4.15). The lexical semantics of a given verb profile the frame-specific roles differently: for *give*, the ‘gift’ is the Theme, and the ‘receiver’ is the animate Goal. For *present*, the ‘receiver’ is treated as the Theme, whereas the ‘gift’ serves as the Instrument to affect the Theme. The argument structure then determines which thematic role will be realized in what syntactic position in default linking. The two different levels of mapping are summarized in Table 6 for *give* and in Table 7 for *present* respectively.

Table 6: Association of frame-level roles, thematic roles and grammatical relations for English *give*

Semantic frame	‘giver’	‘gift’	‘receiver’
Thematic role	Effector	Theme	Location (Goal)
Grammatical relation	subject	object	adjunct

Table 7: Association of frame-level roles, thematic roles and grammatical relations for English *present*

Semantic frame	‘giver’	‘gift’	‘receiver’
Thematic role	Effector	Instrument	Theme
Grammatical relation	subject	adjunct	object

Differences in frame-semantic roles are assumed in this study in order to account for lexical differences like those between *give* and *present*. Other differences – as present in argument structure alternations that do not change the number or thematic role, but only the syntactic status of participants of a verb as in the case of the dative alternation possible also for *give* – present a different case. Such alternations are treated at the level of argument structure (see 1.7.2.4).

1.7.3. SUMMARY: THE LEVELS OF INFORMATION TAKEN TOGETHER

In this chapter, I have distinguished between features that are specified at the lexical level and features that are contributed compositionally or pragmatically. Accordingly, several levels of information structure for verbs have been assumed, following Bohnemeyer (2001, 2004). These levels comprise a level of lexical aspect (1.7.2.1), an event structure or lexical semantic representation (1.7.2.2), a participant structure (1.7.2.3), an argument structure (1.7.2.4), and a level of frame-semantic roles (1.7.2.5). Of all the parameters traditionally associated with lexical aspect, telicity, dynamicity and durativity, yielding the four Vendlerian classes, it will be assumed that dynamicity alone is encoded at the lexical level or the verb's event structure. The other two parameters, of which only telicity is of concern here, are not taken to be determined lexically, but to follow from compositional semantics of the clause, i.e. of the presence or absence of quantified NPs, temporal modifiers, etc. The elimination of telicity from the level of event structure presents a formalized solution for verbs of creation and destruction, verbs of inherently directed motion and degree achievements. If merely the presence or absence of a change of state, but not telicity, is encoded in a verb's event structure, degree achievements need not be treated separately from verbs of incremental change of state. The event structure, minimized in comparison to lexical semantic representations drawing on aspectual distinctions in the Vendler-Dowty tradition, contains the information about the temporal properties of a verb, only differentiating between states, processes and changes of state. In addition, the event structure specifies the causal relations that hold between subevents of complex events. The event structure determines compositionally, in interaction with the participant structure and lexical aspect, whether the event will be durative or punctual, telic or atelic. A verb's participant structure further completes the information contained in the event structure about the participants in an event. If, for instance, the event structure of a verb does not specify the animacy or agency of a referent as part of the lexical semantics, the information related to participants of an event is contributed at this level. Finally, a predicate's argument structure specifies the linking mechanisms of thematic roles onto grammatical relations. Since the argument structure relies on the participant structure, it is again co-determined by the event structure. Semantic frames, although always underlying the linguistic description of events, are only considered where they can be taken into account for differences in lexical organization through the linking of identical frame-semantic roles to different thematic roles.

INTRODUCTION

The assumptions taken in this thesis on the amount of information contained in and the interaction between the different levels of information structure (i.e. event structure, participant structure, lexical aspect and argument structure) can be summarized with the example *Friederike destroyed the manuscript*. The event structure of *destroy* specifies two subevents, a causing subevent (not specifying the manner in which the change of state is brought about, since one can destroy manuscripts by tearing them, by throwing them against the wall, by flushing them down the toilet, etc.), and a change of state subevent. The causing subevent contains an argument represented as an Effector, whereas the caused subevent lexically specifies a Theme participant. Since *destroy* does not lexically determine the exact nature of the Effector, only the participant structure of the clause optionally specifies the thematic role of the Effector as an Agent – this Effector could also correspond to a Force (*The fire destroyed the manuscript*) or an Instrument (*The shredder destroyed the manuscript*). The event structure of *destroy* narrows down the options for complementing the participant information in the participant structure, since only participants instigating an event can be subtypes of Effectors. The event structure for *destroy* characterizes the event as one of change of state. The level of lexical aspect for the clause is, in turn, not independent of the event structure of the verb and the participant structure of the clause – again, this level is co-determined by features of the other levels. Thus, only verbs denoting a change of state at the event structure level can indicate the telicity or atelicity of this change of state at the level of lexical aspect. Moreover, the number and quantizedness of participants has consequences for lexical aspect features like punctuality vs. durativity and telicity vs. atelicity. A co-determinacy between the different levels of information structure does not mean, however, that all parameters are always fully determined at the same level. *Destroy*, in contrast to *damage*, for instance, lexically denotes a telic change of state. This means that the verb is ‘overspecified’ for lexical aspect at the level of event structure (just as some verbs, such as English *assassinate*, in contrast to *kill*, are overspecified as being agentive rather than as merely having an Effector at the level of event structure). The argument structure is a syntactic reflex of the number and hierarchical relations of the argument contained in the event structure; in the case of *destroy*, it could be stated as <x y>. The argument structure of *destroy* guarantees that its first argument is linked to subject and its second argument to object in default linking; and this information is sufficient for other operations on argument structure or morphosyntactic operations, such as the passive, where the first argument will be omitted or linked to adjunct, and the second argument to subject.

CHAPTER 1

Although I am not committed to a particular syntactic theory, the assumptions presented in this chapter are all in the spirit of lexicalist approaches to argument structure. My assumptions are comparable to the account by Levin & Rappaport Hovav (although I do not share these authors' ultimate assumptions on innateness). The event structure templates employed here are translatable into Role and Reference Grammar lexical representations (Van Valin & LaPolla 1997), although I do not share their 'basic *Aktionsart* classes'. Nevertheless, several of the templates assumed here have direct correspondences in Van Valin & LaPolla's classes, and the remaining templates can be seen as conflating several of their classes based on distinctions not taken to be lexically anchored here (see 1.7.2 for details of my argument). Table 8 summarizes these correspondences.

Table 8: Correspondences between Rappaport Hovav & Levin's event structure templates in my interpretation and Van Valin & LaPolla's lexical representations

Rappaport Hovav & Levin (1998) as interpreted here	Van Valin & LaPolla (1997: 102-109)
[x <STATE>]	[predicate' (x)]]
[x ACT <MANNER>]	[DO' (x, [predicate' (x)]]]
[BECOME [X <STATE>]]	[INGR predicate' (x)] [BECOME predicate' (x)]
[[x ACT <MANNER>] CAUSE [BECOME [y <STATE>]]]	[DO' (x, [predicate'₁' (x, y)]] & BECOME predicate'₂' (z, x) or (y)]
[x CAUSE [BECOME [y <STATE>]]]	[CAUSE (x) [INGR predicate' (y)]] [CAUSE (x) [BECOME predicate' (y)]]

The assumptions taken in this thesis on argument structure are compatible with Lexical Functional Grammar approaches to argument structure (Bresnan 2001), which also assume argument structure to be a syntactic reflex of a richer lexical representation, even though I do not follow the formalisms of these and other frameworks with respect to the features specifying the prominence relations between arguments. The approach taken here seems at first sight incompatible with specifically one theoretical orientation, the one of Construction Grammar (Goldberg 1995). The major difference between Goldberg's and my own account as well as other lexicalist treatments concerns, nevertheless, only the level at which semantic motivations underlying argument structure are assumed – for Goldberg, this level is the constructional level, for me it is the lexical level.

INTRODUCTION

All the notions addressed in this chapter are relevant for the chapters introducing the large argument structure classes of Jalonke in chapters 3-6.²⁶ The distinction between morphosyntactic and morpholexical operations is particularly relevant for chapter 7, where valence-changing processes are distinguished from meaning-changing processes on the assumption that the former only access argument structure, while the latter are sensitive to a verb's meaning. Causation types of verbs, specifically the distinction between internally caused, externally caused, and uncaused verbs, are the focus of chapter 8, which discusses unaccusativity in Jalonke. Chapter 9 on argument realization in discourse introduces additional discourse-pragmatic principles that, independently of argument structure and argument structure alternations, might be responsible for the number of arguments realized. These assumptions are tested empirically in that chapter.

1.8. METHODOLOGY

1.8.1. FIELDWORK SETTING

Between January 2000 and January 2002, I spent about 11 months in Saare Kindia, distributed over three field trips. Occasionally, I visited the nearby village Heeriko, also mainly populated by Jalonke. During my stay in the village, I lived in the family of El Hadj Mammadou Diallo. The family consists of El Hadj Mammadou Diallo, his first wife Ai Koumba Bary and their youngest two daughters Houleymatou and Mariama, and his second wife Jiba Bary with all their children. With the exception of the second wife, a Fula, and her children, they are Jalonke, but all speak fluent Fula. Nobody in the family has any knowledge of French, apart from the children, who go to school but do not master it (yet). The nearest neighbors are all Jalonke speakers.

Being surrounded by Jalonke speakers day and night enabled me to engage in quite close participant observation. Linguistic information collected during formal work sessions was often tested with family members while playing or engaging in a conversation. The close contact with local people also facilitated the observation and recording of every-day activities. A great help in every respect were the tea rounds that took place three times a week. A group of up to ten people would gather at my

²⁶ Chapter 6, introducing reflexive-only verbs, makes use of a notion not introduced here, the notion of control (in a sense different from Smith 1978 and henceforth referred to as 'control in the sense of Klaiman' (1991, 1992)). This notion is irrelevant for the majority of verbs, but necessary in order to account for the argument structure properties of reflexive-only verbs.

CHAPTER 1

place and cook the traditional strong green tea. These occasions were a combination of language class and elicitation session: my Jalonke was tested and corrected, stories were told, and gossip was shared. Most of the example sentences for the Jalonke primer were collected during these long evenings, and the participants of the tea rounds were also the authors and actors of the stage-play already mentioned.

Apart from this relatively unstructured involvement in village life, the bulk of the linguistic fieldwork consisted of working sessions of different kinds. Elicitations in the narrow sense (see 1.8.3 below) were conducted with two consultants, Mammadou Adama Bary and Mammadou Alpha Bary. Both helped devise an orthography for the language and were trained in it, so that they could transcribe texts. A large number of consultants contributed narratives and procedural texts, most of which were recorded in the presence of several interlocutors. During the second and third field trip, I was familiar enough with some people to tape conversations. An equally large number of consultants participated in sessions involving visual stimuli of various kinds.

In the beginning, I had to rely on routine formulae for interaction with the villagers, and on French as a metalanguage for the working sessions. Gradually, French got more and more replaced by Jalonke in all contexts, and during my last stay, almost all working sessions were conducted in Jalonke.

1.8.2. CONTRIBUTORS

The main consultants with whom I carried out the elicitation of word lists and morphosyntactic and semantic properties of verbs were Mammadou Adama Bary and Mammadou Alpha Bary. They and the other principal consultants appear in Appendix 1. All of the consultants were born and raised in Saare Kindia; most of them live there or spend several months a year there. If they are relatives to other main consultants, the relation is indicated, if known. Their year of birth, as far as determinable, is given. The languages they speak are offered in order of fluency as stated by the consultants themselves, with explanations where necessary. Since for all of them Jalonke is the first language, it is not listed in the appendix.

In addition to the regular consultants more than a dozen people, among them many old people, made contributions in the form of narratives, songs, proverbs, etc. Many more people also agreed to let me video-record them while participating in ceremonies, working in the field, or carrying out other daily tasks.

INTRODUCTION

1.8.3. KINDS OF DATA

The lexical database compiled so far consists of ca. 2000 entries, ca. 500 of them being verbs. 422 of these verbs were entered into a separate lexical database. Since not all these verbs appear in the text corpus, an example sentence for every verb and its derived forms was elicited from consultants. Tests for all properties of verbs mentioned in this thesis (see 1.8.4 below) were also conducted for every one of these 422 verbs with two consultants. This verbal database is referred to as the ‘lexicon’ throughout this thesis.

A text corpus of an approximate length of 21 hours of recorded speech covering different genres was collected (see Table 9 for details).

Table 9: Structure of the Jalonke text corpus

Communicative event	Genre		Recording time in minutes
Observed	Narrative	Historical	118
		Personal	226
		Story	127
	Conversation		259
	Other (speeches, songs, proverbs, procedural texts, etc.)		318 (+written collection of proverbs and letters)
Staged	Action descriptions		235
Total recording time			1283

The text corpus consists entirely of ‘observed’ and ‘staged communicative events’ (Himmelmann 1998: 185). Observed communicative events comprise all texts for which the influence of the linguist on the context is limited to his presence as an observer. Staged communicative events are, according to Himmelmann (1998: 185), “enacted for the purpose of recording”. Within this category, staged events where speakers are prompted linguistically to talk about a certain topic can be differentiated from events prompted by “props” (Himmelmann 1998: 185) or stimuli. A considerable amount of data used in this study was gained through the use of stimuli, mainly devised by the members Language & Cognition Group of the Max Planck Institute (see Table 10 for details).

CHAPTER 1

Table 10: Stimuli of the Language & Cognition group used

Stimulus	Label used in examples	Nature	Task
ECOM-Clips (Bohne-meyer & Caelen 1999)	ECOM	video animation	preferred and possible de-scription of motion events
The Topological Relations Picture Book (Bowerman & Pederson 1993)	BowPed	line drawings	description of topological re-lations
Picture Series for Posi-tional Verbs (Ameka, de Witte & Wilkins 1999)	Pos	photos	description of topological re-lations
Enter/Exit Animation (Kita 1995)	Enter/exit	video (animation)	description of enter/exit scenes
New Tomatoman (devel-oped by Allen, Kita & Özyürek)	Tomatoman	video (animation)	description of motion events
Caused Positions (Hellwig & Lüpke 2001)	Caused posi-tions	video (acted)	description of caused and spontaneous putting-events
Event Triads (Bohne-meyer, Eisenbeiss & Na-rasimhan 2001)	Triads	video (animation)	non-linguistic similarity judgments of motion events and linguistic description of motion events
Demonstrative Question-naire (Wilkins 1999)	Demon	abstract scenes serving as the ba-sis for reenactment	reenactment accompanied by speech
Cut & Break Clips (Bohnmeyer, Bowerman & Brown 2001)	Cut&Break	video (acted)	description of cutting- and breaking-events
Table Top Route descrip-tion (Wilkins & Danziger 1996, Wilkins & Danziger 1999)	Route	object manipula-tion	director-matcher task for re-tracing routes
TEMPEST films (Bohne-meyer 1998b)	TEMPEST	video (acted)	description of the temporal order of events

These stimuli are aimed at the collection of cross-linguistically comparable data on a range of research topics, from spatial organization to motion events. Most of them are designed to trigger linguistic descriptions of pictures and videos. Besides the MPI-tools, other visual stimuli were used. They are listed in Table 11.

Table 11: Other stimuli used

Name	Label used in examples	Nature	Task
Frog Story (Slobin 1993, Berman & Slobin 1994))	Frog	picture book	retelling the story
The Pear Film (Chafe (ed.) 1980)	Pear	video (acted)	retelling the story
The Chicken Film (Givón 1990)	Chicken film	video (acted)	retelling the story

INTRODUCTION

Name	Label used in examples	Nature	Task
Maus films (cartoons from “Die Sendung mit der Maus”)	Maus	video (animation)	retelling the scenes
Canary Row scenes (sequences from a Tweedy Bird cartoon)	Canary	video (animation)	retelling the scenes
Quick & Flupke (Tintin)	Quick&Flupke	picture stories	retelling the scenes

With the exception of the Pear film, the recommendations for the use of the stimuli as given by the cited sources was followed. Where stimuli were analyzed in detail in order to answer specific research questions, the stimulus and the procedure employed are discussed in the relevant sections of this thesis. Otherwise, the resulting texts are integrated into the corpus used for lexical searches.

Video-recordings of diverse activities recorded in Saare Kindia were also deployed with the intention of collecting online-descriptions covering a wide range of culture-specific contexts. All of the resulting descriptions, labeled ‘action descriptions’ are present in the corpus.

Staged communicative events also comprise other texts where I had some influence on the content, although not on its linguistic structure, by prompting speakers to talk about certain topics or asking them questions. The text collection resulting from observed and staged communicative events is henceforth referred to as the ‘corpus’.

A separate database used for statistical analyses consists of ca. 5000 clauses from thirty different speakers. This database, referred to as the ‘sample’ throughout the thesis, forms a subset of the corpus. The sample is the focus of chapter 9 on argument realization in discourse. The structure of the sample is described in detail in Appendix 5. None of the staged communicative events resulting from the stimuli listed above feature in the sample. The reason for excluding stimulus-based texts from the sample is that although they consist of communicative events on whose linguistic structure I did not take direct influence, they do not constitute examples of natural language use. Many of the stimuli investigating specific linguistic domains yield repetitive use of the same constructions, for instance, and none of them triggers descriptions that are common cultural practices of Jalonke speakers. Since it is the aim of chapter 9 to investigate argument realization in discourse, only those stretches of discourse that are likely to represent good examples of natural language use are included in the sample. Some of the action descriptions briefly introduced above are contained in the sample. The reason for including this genre in

CHAPTER 1

the sample is that, although a novel genre invented for the purpose of linguistic investigations, they are very close to monological narratives and procedural texts in structure. Therefore, they are at least very close to communicative events that are part of every-day language use in the Jalonke culture. The linguistic characteristics of action descriptions are described in detail in 9.3.1.

Another source of data consisted of elicitations. Following Himmelmann (1998), I understand elicited data as utterances translated from the metalanguage into the target language as well as acceptability judgments given for utterances in the target language constructed by the researcher. The former consist mainly of word lists, but two questionnaires were used as well. These questionnaires are the Tense-Mood-Aspect Questionnaire (Dahl 1985) and the Event Integration Questionnaire (Bohnenmeyer 1999). The questionnaires place the relevant utterances into a context which was construed with the help of the consultant, and, if necessary, adapted to the local setting.

Acceptability judgments, whose problematic status is well known, were avoided whenever possible. Instead of me actively constructing an utterance featuring e.g. a derived causative of a verb or giving the equivalent French sentence, I asked consultants trained in linguistic terminology in French for the Jalonke causative form of the corresponding verb in a sentence. During the later stages of field work, elicitations were also conducted in Jalonke, consisting of me asking for possible paraphrases for Jalonke sentences uttered by me or applying substitution tests, the semantic tests described in 1.8.4 below, etc.. Utterances resulting from this procedure were always tested with a second consultant, in cases of variation with up to four consultants.

Eliciting data was the only possible way to complement the lexicon. It is well known that small, field-based corpora offer no negative evidence, that is, from the absence of a lexical item or construction it cannot be concluded that it doesn't exist in the language. Small corpora rarely offer the full distributional range for an item or construction and often don't reveal important details such as the corresponding real-world situation for a linguistic description. Additionally, occurrences of lexical items in corpora often do not reveal their properties – for verbs, for instance, it is impossible to assess their aspectual properties or their range of participants, etc., from an inspection of texts alone. Therefore, from the very start of field work, intuitions based on the corpus were complemented by structured elicitation sessions.

INTRODUCTION

These sessions helped to generate a lexicon that offered the following information for every single verb contained in it:

- Active, passive, or ambiguous reading in an intransitive clause²⁷
- Possibility of the verb to appear alternating in a transitive clause
- Admissibility of the causative, distributive, and iterative derivational prefixes
- Valence-change and meaning observed for the verb when combined with the causative, distributive, or iterative prefix
- Information on event structure and lexical aspect based on the results of the semantic tests introduced in 1.8.4 below
- Information on the possessive construction(s) in which the nominalized verb appears
- Possibility of forming an adjectival participle
- Information on the specifications control (in the sense of Klaiman) based on the results of the semantic test introduced in 1.8.4.7 below
- Information on the participant structure specifications

Although the resulting lexicon also contains stretches of discourse in the form of example sentences, it is to be differentiated from discourse data contained in the corpus and the sample. The lexicon permitted assigning argument structures to all verbs through the totality of their syntactic and semantic properties, comprising properties that cannot be won from an inspection of discourse, because they are covert and need to be revealed through semantic tests, or because the necessary constructions are not attested in the corpus. The corpus was used to feed the lexicon through building hypotheses on verbs and through verifying information based on elicitation. Throughout the study, corpus data are used to illustrate properties of verbs whenever possible. The sample, in contrast, serves one major goal: to test whether the argument structures for verbs based on the lexicon are reflected in the actual use of these verbs. To be more precise, the sample was designed to find out whether the argument structures preassigned to verbs on the basis of a qualitative inspection of all of their properties are reflected in the syntactic realizations of

²⁷ Note that the Jalonke passive, treated extensively in 7.3.2, is not morphologically marked. The analysis of intransitive clauses featuring transitive verbs as passive clauses is therefore not shared by all researchers working on Mande languages with equivalent constructions. An alternative account would be to analyze transitive verbs as *labile*. As extensively demonstrated in chapter 9, the passive is a marked alternation in terms of frequency, productivity, and discourse distribution, and is thus best viewed as an alternation from basic argument structure for transitive verbs.

CHAPTER 1

these verbs for a large number of speakers, genres, and texts, or whether the qualitative findings merely show optional syntactic configurations for verbs.

Examples resulting from elicitations don't bear a source label throughout this study, because they cannot be attributed to one single consultant or elicitation session. Often, entries were complemented incrementally over a longer period of time, and generally entries were checked, corrected, and/or negotiated continuously with two (and in cases of variation up to four) consultants.

1.8.4. TESTS EMPLOYED FOR VERBS

Most of the tests introduced below are relevant for several chapters in the thesis. Therefore, the tests are discussed and illustrated in some detail here, and henceforth referred back to by their label.

1.8.4.1. THE DEFAULT ASPECT TEST

All dynamic verbs were distinguished from stative verbs through the 'default aspect test'. Jalonke stative verbs unmarked for tense or aspect receive a default present tense interpretation, in contrast to dynamic verbs, which receive a past perfective interpretation (see 2.8.2.2.1 and 3.3.3). These interpretations were tested by examining whether the verb form unmarked for tense or aspect was compatible with *xɔri* 'now', and what the translational equivalent of the zero-marked verb was. Zero-marked stative verbs, as in (29), admit this temporal adverb, whereas zero-marked dynamic verbs, as in (30), don't.

- (29) *Xɔri, n tagan.*
now 1SG be tired
'Now, I am tired.'

- (30) **Xɔri, n waa.*
now 1SG cry
* 'Now, I cry/am crying.'

Dynamic verbs, be they manner verbs, as in (30), or verbs of change, as in (31), only admit the temporal adverb *xɔri* 'now' if marked for imperfective aspect:

INTRODUCTION

- (31) *Xɔri, n faa -ma.*
now 1SG come -IPFV
'Now, I am coming.'

If zero-marked for aspect, dynamic verbs always yield a past perfective interpretation:

- (32) *N faa.*
1SG come
'I came.'

- (33) *N waa.*
1SG cry
'I cried.'

Stative verbs, in contrast, receive an imperfective interpretation when they occur zero-marked for aspect:

- (34) *N tagan.*
1SG be tired
'I am tired.'

1.8.4.2. THE DYNAMICITY TEST

If stative verbs are compatible with the imperfective marker, they receive a state-change interpretation (cf. 3.5). The interpretation of the imperfectively marked form was tested for all stative verbs (that is, verbs with a default present time interpretation for their zero-marked form) by eliciting whether an imperfective interpretation or an ongoing state-change interpretation holds for the form marked with the imperfective marker. Thus, for a sentence as in (35), it was asked whether this sentence means the same as (36).

- (35) *Jeena fur -aa.*
water be hot -IPFV
'The water is getting hot.'

- (36) *Jeena fura*
water be hot
'The water is hot.'

CHAPTER 1

If the answer was (37), this was taken to confirm the ongoing state-change interpretation.

- (37) *Ɔɔ, a mɛn mun fura, a fur -aa.*
 no 3SG yet NEG be hot 3SG be hot -IPFV
 ‘No, it is not yet hot, it is getting hot.’

Further, an informal visual stimulus was created, consisting of gradual changes in color and shape. The aspectual interpretations for some stative verbs denoting color and shape were corroborated through the responses to this stimulus. Consultants were first shown the entire sequence of change, e.g. from white to black. They were then asked to determine the colors of the source- and target states, which yielded zero-marked forms of the color terms in question. Subsequently, the sequence of change was stopped in the middle of the ongoing change. If then asked for the color or shape of the stimulus item, consultants regularly responded by giving a form marked for imperfective. In addition, when asked to specify how the stimulus item was before and how it was after the sequence of change, consultants explicitly referred to the change by using the *a i* construction (see 3.5.2) for a detailed discussion and examples).

1.8.4.3. THE REALIZATION-UNDER-CESSATION TEST

The ‘imperfective paradox’ (Dowty 1979), or the finding that e.g. *yawning* entails having yawned, while *dying* does not entail having died, distinguishes atelic from telic predicates. In Jalonke just as in English, this difference between telic and atelic verbs and clauses can be diagnosed by the realization-under-cessation test. Taking a sentence with a dynamic verb marked for imperfective as the starting point, for instance ‘Adama is yawning’, the test consists of asking ‘When Adama stops yawning (in the middle of it), has he yawned?’. If the answer is ‘Yes, he has (already) yawned’, the verb is atelic. If the answer is ‘No, he hasn’t yawned yet’, the verb denotes a telic change of state. Jalonke results for *kaakun* ‘yawn’, an atelic verb, are given in (38)-(40).

INTRODUCTION

- (38) *Adama kaakun -ma.*
 Adama yawn -IPFV
 ‘Adama is yawning.’

- (39) *A na a luu, a banta kaakun?*
 3SG when 3SG cease 3SG PF yawn
 ‘When he stops it, has he already yawned?’

- (40) *Owun, a banta kaakun.*
 yes 3SG PF yawn
 ‘Yes, he has already yawned.’

Examples for *tuu* ‘die’, a telic verb of change of state, follow below:

- (41) *Sii -na tuu -ma.*
 goat -DEF die -IPFV
 ‘The goat is dying.’

- (42) *A na tuu -ma, n manji a fala ra:*
 3SG when die -IPFV 1SG be able 3SG speak with
 When it is dying, can I say:

A banta tuu?
 3SG PF die
 it has (already) died?’

- (43) *Ɔ, a men mun tuu.*
 No, 3SG yet NEG die
 ‘No, it hasn’t died yet.’

1.8.4.4. THE DURATION-COMPLETION TEST

Atelic and telic verbs and clauses can often additionally be distinguished through the compatibility with temporal operators indicating duration vs. completion (English *for* vs. *in*) (see Dowty 1979, Kenny 1963, Van Valin & LaPolla 1997, Vendler 1957, 1967, *inter alia* for this and other tests distinguishing lexical aspect types). Jalonke does not employ different postpositions for duration vs. completion. Rather, the language signals both *for* and *in* through the postposition *kwi* ‘in’. Nevertheless, atelic verbs differ from telic verbs in the interpretation of temporal

CHAPTER 1

operators in a postpositional phrase headed by *kwi* ‘in’. For atelic verbs, this temporal operator corresponds to a durational operator equivalent to English *for*.

- (44) *A waa -xi ler keden nan kwi.*
 3SG cry -PF hour one FOC in
 ‘She has cried for one hour.’

This interpretation can be tested by asking consultants ‘If X has verbed for less than the specified time interval, has (s)he verbed?’. In the case of (44), the question would be:

- (45) *Minyti fuu na dangu, a banta waa?*
 minute ten when pass` 3SG PF cry
 ‘When ten minutes passed, has she (already) cried?’

For atelic verbs, for any time interval at the interior of this interval, it is possible to assert that the event denoted by the verb already happened, as in (46), a clear indicator that it consists of homogeneous phases:

- (46) *A waa -xi.*
 3SG cry -PF
 ‘She has cried.’

For telic verbs, the temporal operators in *kwi*-phrases are understood as temporal specifications corresponding to English *in* that indicate that the change denoted by the verb was completed within the specified time interval. If confronted with a sentence like (47) and asked (48), a Jalonke speaker will answer with sentence (49):

- (47) *A band -εε jin -xi ler keden nan kwi.*
 3SG food -DEF cook -PF hour one FOC in
 ‘She cooked the food in one hour.’
- (48) *Minyti fuu na dangu, a banta band -εε jin?*
 minutes ten when pass, 3SG PF food -DEF cook
 ‘When ten minutes passed, has she (already) cooked food?’

INTRODUCTION

- (49) *Ɔɔ, a mɛn m' aa jin, a jin -ma.*
 no 3SG yet NEG 3SG cook 3SG cook -IPF
 'No, she hasn't cooked it yet, she is cooking it.'

1.8.4.5. THE DEGREE-OF-CHANGE TEST

If verbs of change of state/location occur in the imperfective, two options can be distinguished. For the verbs that lexically encode a discrete result state (or are telic), the event denoted by the verb is not interpreted as realized. For the verbs that do not encode a discrete result state (or are atelic), the interpretation of the event as realized or not depends on properties of the clause. The realization-under-cessation test for the different groups of verbs illustrates these properties. For verbs of discrete change of state like *tuu* 'die', it is impossible to view them as realized when interrupted before completion. Thus, the only possible answer to the question 'When a goat is dying, has it died?' is 'no' (as shown in (41)-(43) above). For verbs of inherently directed motion and verbs of gradual change, the interpretation of the imperfective is different. If no measured Path is present, verbs of inherently directed motion receive an atelic interpretation, as exemplified by the answer to the realization-under-cessation test for (50) in (51).

- (50) *Mariama tee -ma.*
 Mariama ascend -IPFV
 'Mariama is going up.'

- (51) *A banta tee.*
 3SG PF ascend
 'She has (already) gone up.'

If atelic verbs of change specify a degree of change, for instance through a measured path in a PP as in (52), they have to be interpreted as telic. The event is then not realized until the Goal is reached, as shown by the answer to the realization-under-cessation test for (51) in (53).

- (52) *Mariama tee -ma kɔl -la fari.*
 Mariama ascend -IPFV hill -DEF on
 'Mariama is going up the mountain.'

CHAPTER 1

- (53) *A men mun tee kol -la fari.*
3SG yet NEG ascend hill -DEF on
'She did not yet go up the mountain.'

Since a telic interpretation for some verbs thus arises compositionally from the clause, the realization-under cessation test was applied to all dynamic verbs with and without a specified degree of change (where applicable) in order to identify all verbs of change as such, be they telic or atelic.

1.8.4.6. THE PUNCTUALITY-DURATIVITY TEST

For verbs of change of state (diagnosed by their default aspect, the realization-under-cessation, duration-completion and degree-of-change tests), it was tested whether they receive a punctual or durative interpretation. This test consisted of assessing their compatibility with the imperfective marker. If a verb of change of state was compatible with the imperfective marker, as *tuu* 'die' in (54), it was taken to denote an event construed as durative.

- (54) *Sii -na tuu -ma.*
Goat -DEF die -IPFV
'The goat is dying.'

If a verb of change of state was incompatible with the imperfective marker (55), it was interpreted to denote an event construed as punctual.

- (55) **Balon -na bul -aa*
ball DEF explode -IPFV
*'The ball is exploding.'

1.8.4.7. THE CONTROL TEST

The feature control (in the sense of Klaiman 1991, 1992, see chapter 6)) was tested by eliciting for all verbs whether there was a necessary controlled interpretation present when they were predicated of human subjects. Control was tested by asking whether it was possible to say that X did or did not do the verb action deliberately. The results of these tests are given below for *jele* 'laugh' that allows both controlled and uncontrolled interpretations:

INTRODUCTION

- (56) *N an tewi -xi nde n jele.*
 1SG 1SG do deliberately -PF INACT 1SG laugh
 ‘I laughed deliberately.’

- (57) *N m' an tewi -xi nde n jele.*
 1SG NEG 3SG do deliberately -PF INACT 1SG laugh
 ‘I didn’t laugh deliberately.’

1.8.4.8. THE PASSIVE TEST

All verbs that appear underived in intransitive as well as transitive clauses were tested for an active or passive interpretation of the intransitive clause. Two tests were used to distinguish active from passive reading (see 7.3.2 for a detailed discussion). The first test consists of assessing the compatibility of the clause with the PP *a kan tagi* ‘by itself (lit.: 3SG type middle)’. The second test assessed the admissibility of specifying ‘nobody verbed X’ or ‘somebody verbed X’. If a clause was compatible with ‘by itself’ and/or ‘nobody verbed X’ only, it was analyzed as an active clause. If the clause was not compatible with either ‘by itself’ or ‘nobody verbed X’ but only with ‘somebody verbed X’, it was analyzed as a passive clause. If a clause allowed for ‘by itself’ and ‘nobody verbed X’ but for ‘somebody verbed X’ as well, this clause was taken to be ambiguous between an active and a passive reading. The tests are illustrated for an active clause in (58)-(60):

- (58) *Band -εε jin. *a kan tagi*
 food -DEF cook 3SG type middle
 ‘The food cooked *by itself.’

- (59) *Band -εε jin. *Muxi oo m' aa jin.*
 food -DEF cook person whatever NEG 3SG cook
 ‘The food cooked. *Nobody cooked it.’

- (60) *Band -εε jin. !Muxi nda a jin.*
 food -DEF cook person some 3SG cook
 ‘The food cooked. !Somebody cooked it.’

1.8.4.9. SUMMARY OF TESTS AND THE DISTINCTIONS THEY DIAGNOSE

Most, but not all of the tests presented above are relevant to the distinction of event structure classes in Jalonke. These tests and the distinctions they diagnose are summarized in Table 12.

CHAPTER 1

Table 12: Tests diagnosing different event structure classes in Jalonke

	States²⁸	Manner verbs	Result verbs	Manner-with-result verbs
Default aspect test	present	past	past	past
Realization-under-cessation test	n.a.	realized	realized/not realized	realized/not realized
Duration-completion test	n.a.	duration	duration/completion	duration/completion
Degree-of-change test	n.a.	n.a.	completion	completion

The dynamicity test was used to assess whether stative verbs admit state change readings (see 3.5).

The punctuality-durativity test was used to evaluate whether the assumptions made on the level of information structure that specifies punctuality vs. durativity hold for Jalonke. The results confirm that indeed, punctuality vs. durativity, is for most, if not all verbs of Jalonke, spelled out at the level of participant structure and underspecified at the level of event structure.

The control test resulted in revealing a difference in interpretation between reflexive-only verbs (treated in chapter 6) from all other argument structure classes. In contrast to all other verbs, reflexive-only verbs are always positively specified for control on behalf of their single participant.

Finally, the passive test was used to distinguish among verbs allowing both transitive and intransitive uses through testing their interpretation in an intransitive clause. The results are summarized below.

²⁸ *For the state-change readings attested for stative verbs, the results for the tests are the same as for result verbs.*

INTRODUCTION

Table 13: Summary of the result of the passive test for verbs allowing both intransitive and transitive uses

	Transitive verb not participating in the unexpressed object alternation	Transitive verb participating in the unexpressed object alternation	Intransitive verb participating in the applicative alternation	Causative/inchoative alternating verb
Interpretation of intransitive clause	passive	active if subject animate; passive if subject inanimate	active	ambiguous

1.9. SUMMARY

The present chapter has given an introduction to the subject studied in this thesis (1.1). The central research questions have been formulated in 1.2, and the analysis developed in the subsequent chapters has been foreshadowed in 1.3, followed by an explanation of the relevance of the Jalonke data in 1.4. The structure of the thesis has been outlined in 1.5. The remaining sections of the chapter have been concerned with general information on the language and its speakers in 1.6, and with the theoretical assumptions underlying my analysis in 1.7. A final section on the field methodology employed and the kinds of data collected (1.8) has also introduced the semantic tests employed throughout (1.8.4). The following chapter will outline essential grammatical features of Jalonke.

A BASIC GRAMMAR OF JALONKE

CHAPTER 2

2.1. INTRODUCTION

This chapter describes those grammatical features of Jalonke essential to understanding the detailed account of lexical argument structure and verb classes in the subsequent chapters. Nevertheless, grammatical domains that are not specifically relevant to verb classes and argument structure are also touched upon, with the intention of presenting the skeleton of a language description for this previously undocumented language. In view of this double purpose, the chapter follows the organizational principles of a descriptive grammar, although it cannot cover all areas of grammar, and per force must concentrate on some domains more than others. Section 2.2 presents some typological characteristics of Jalonke and of Central Mande (henceforth CM) languages in general. Section 2.3 offers an overview of the phonology. Section 2.4 addresses the problem of identifying word classes, focussing on the controversial issue of noun/verb-distinction in Mande languages. Sections 2.5 to 2.8 are concerned with the word classes of adverbs, nouns, postpositions, and verbs respectively and summarize their morphosyntactic properties. Section 2.9 introduces clause, predication and sentence types, focusing on relative clauses and types of non-verbal predication, and illustrating only major sentence types, since the wealth of the discussion of verbal clause structure takes place in the chapters 3 to 7 of this thesis. A summary (2.10) concludes the grammatical sketch.

2.2. SOME TYPOLOGICAL CHARACTERISTICS

2.2.1. TYPOLOGICAL PROFILE

Jalonke exhibits the typical rigid Mande word order SOVX (Creissels 2000), X standing for all adjuncts. Jalonke doesn't mark grammatical relations through case marking, cross-referencing or agreement on the verb. Nevertheless, the grammatical relations subject and object are encoded configurationally through word order. Only arguments of a verb can be linked to subject and object, so only arguments can appear in the requisite preverbal positions. Arguments cannot be ellipsed, but

CHAPTER 2

must be pronominalized even if they are non-referential or recoverable from the context.

Unlike other CM languages, Jalonke, like the closely related Soso, has almost no ‘predicate markers’ (Kastenholz 1995) or auxiliaries that obligatorily follow the subject. Soso and Jalonke make use of only one predicate marker, the past marker *nun*, whose position in the clause is flexible. The majority of CM languages mark tense, aspect, and mood by predicate markers following the subject and preceding the object, with one notable exception: the intransitive past/perfective marker is suffixed to the verb. Jalonke, Soso (Houis 1963, Friedländer 1974) and Jogo (Kastenholz 1995) contrast with this picture because they employ predicate markers, although only marginally, **and** verbal suffixes and enclitics or a combination of both. Moreover, Jalonke and Soso, in contrast to other CM languages, do not distinguish between transitive and intransitive past/perfective markers.

The few grammatically marked functional categories in the language are expressed through affixes and enclitics; apart from three verbal derivational prefixes (see 2.8.3 below), the language exhibits a clear suffixing preference.

2.2.2. CONSTITUENT ORDER

Mande languages exhibit synchronically a rather unusual constituent order: while other modifiers follow their head, the genitival modifier, the possessor, precedes its head, the possessum. Demonstratives are attested both preceding and following their head in different Mande languages; in Soso (Houis 1963, Friedländer 1974) and Jalonke, they occur head-initially. Thus, in Mande languages word order in the noun phrase is not always consistent with the order of constituents in the clause (which itself is conflicting since adjuncts appear sentence-finally), hence being opposed to the general tendency of a harmonic patterning between the two. In order to account for the conflicting word order patterns, some space is dedicated here to their discussion. African languages with ‘inconsistent’ word orders generally have the constituent orders SVOX or SOVX. For this reason, African SVOX and SOVX languages are subsumed under one type, type B, by Heine (1976), according to the placement of the possessor in front of its head. Type B languages thus comprise SVO languages that do not follow a harmonic head-dependent order for all constituents – in the possessive construction, the dependent precedes the head – and SOV languages that deviate from a consistent dependent-head pattern – oblique arguments and adjuncts are placed after their head. What both subtypes, SVOX and SOVX, further have in common is that their constituent order is unstable: in SVOX

languages, a reanalysis of auxiliaries often creates an alternative SOVX constituent order. In SOVX languages, there is evidence that just such a reanalysis happened and that they diachronically had the word order SVOX, or more accurately, S V possessor N. Heine & Reh (1984), followed up by Claudi (1988, 1993, 1994), propose a word order change in order to account for the synchronic properties of the SOVX languages in question.¹ At the origin of this change, they claim, is a clause structure like the one in (1). Through syntactic reanalysis, a new output structure, as given in (2), arises.

- | | | | | |
|-----|---|-----|-----------|---|
| (1) | S | V | possessor | N |
| (2) | S | TAM | O | V |

The main characteristics of this development are the following:

- (1) A limited set of verbal auxiliaries was grammaticalized to serve as predicate markers.
- (2) These markers were assigned an obligatory complement consisting of the nominalized verb plus an optional relational noun, which functioned as the head of an inalienable genitive construction and assumed a postposition-like role.
- (3) Direct objects were introduced as inalienable genitive NPs of the nominalized verb and thus came to be placed before the verb. (Heine & Reh 1984: 212f.)

This scenario of word order change through syntactic reanalysis is corroborated by the following synchronic properties of Mande languages:

- (i) The lack of a formal noun/verb distinction
- (ii) Nominal periphrastic strategies of TAM marking
- (iii) A structural ambiguity between possessive NPs and OV sequences

¹ *The scenario proposed by Heine & Reh (1984), Claudi (1988, 1993, 1994) is not the only one proposed; for a scenario admitting word order change in the opposite direction see Givón (1975b); for a scenario reconstructing the word order S-Aux-O-V-Other back to Proto-Niger-Congo see Gensler (1994). Nevertheless, large parts of Heine & Reh's and Claudi's argument are by now unanimously accepted by researchers working on Niger-Congo languages (cf. Gensler 1997; Williamson and Blench 2000) and Mande scholars interested in word order typology (cf. Creissels 1997, 2000).*

CHAPTER 2

These properties are discussed in the following paragraphs.

(i). The lack of a morphologically marked noun/verb distinction. The great majority of Mande languages do not exhibit morphological means to distinguish nouns from verbs. This lack of marking points towards an origin of the synchronic main verbs in nominalized complements of the present-day auxiliaries/predicate markers. The synchronic auxiliaries are consequently taken to have represented the main verbs before the syntactic change took place. Where formal distinctions between nouns and verbs exist in the synchronic languages, as in Bozo (Blecke 1996; 1998), Manding (Dumestre 1994) and Soso (Houis 1963; Friedländer 1974), they are achieved by different means. In Manding and Soso, a formal difference between nouns and verbs arises through derivational marking on the deverbal noun, but in Bozo through transitivity and aspect marking on verb stems. Furthermore, these mechanisms have a different status in the synchronic languages (see 2.4 for an overview on the differentiation of word classes). It is a matter of future research to determine the scope of traces of these two different strategies of formal noun-verb distinction in different Mande languages in order to get a hint of their temporal ordering. The fact that they employ different formal mechanisms makes it likely that they do not go back to a common protolanguage but constitute independent innovations of different branches or individual languages of (Western) Mande.

(ii) Nominal periphrastic strategies of TAM marking. Further, a nominal periphrastic strategy of TAM marking, consisting of an auxiliary plus a nominalized verb and a postposition originating in a relational noun, is widespread in Mande languages. It is probable that these present-day nominal periphrastic constructions are not the same ones as those that were at the origin of the word order change from SVOX to SOVX but reflect later grammaticalization cycles. Even so, their existence throughout Mande languages makes it plausible that an equivalent construction served as their model, and that SOV sequences came about through deletion of the clause-final relational noun.

(iii) A structural ambiguity between possessive NPs and OV sequences. In addition, many Mande languages (cf. Innes 1967 on Mende) in their present state do not structurally distinguish between possessive NPs and OV sequences. In other Mande languages, the differences are marginal, given the lack of a formal distinction between object and possessive pronouns. In Bambara, for instance, the only formal difference between a possessive NP and an OV sequence lies in the absence of tonal definite marking on the V. Jalonke behaves like Bambara in this respect:

A BASIC GRAMMAR OF JALONKE

In an OV sequence, the V does not take the nominal definite marker *-na*. The grammaticalization of the distal demonstrative pronoun into a definite article is a separate innovation of Yalunka, and the development of TAM suffixes/enclitics is limited to the Soso-Yalunka cluster and Jogo.

These properties of Mande language corroborate the scenario of word order change through syntactic reanalysis proposed by Heine & Reh (1984) and Claudi (1988, 1993, 1994). Jalonke fits their analysis perfectly. Since the scenario of word order change through category change is the most suitable to elucidate the synchronically disharmonic word order in Jalonke, it is the one offered here in terms of an explanation.

2.2.3. THE ARGUMENT-ADJUNCT DISTINCTION

Grammatical relations in Jalonke are marked by word order, not by morphological case. Participants other than subject and direct object are realized in postpositional phrases. All grammatical frameworks make a distinction between arguments and adjuncts or core and periphery. While there is syntactic evidence that subject and object are arguments in Jalonke, the evidence deciding on the syntactic and semantic status of postpositional phrases in the language is less clear.

Adpositional phrases are under certain conditions analyzed as ‘oblique’ arguments (Van Valin & LaPolla 1997: 29ff.). According to these authors this is the case, for instance, if “the NPs in these PPs are represented in the semantic representation” of a verb (as the *to*-phrase with English *give*), and if these adpositional phrases can be promoted to argument positions (English *John presented the award to Mary* vs. *John presented Mary with the award*). In general, a combination of semantic and syntactic criteria is given for the classification of an NP as an argument or an adjunct:

- (i) Arguments are required by the verb in order to form a complete clause, while adjuncts are not.
- (ii) Arguments, but not adjuncts can undergo certain syntactic operations, e.g. relativization or passivization.
- (iii) Arguments tend to be marked by case; adjuncts tend to be realized in adpositional phrases.
- (iv) Finally, arguments are said to express semantically necessary participants of an event, while adjuncts don’t. Accordingly, arguments are more likely

CHAPTER 2

to refer to objects or persons, and adjuncts preferably refer to time, space, instruments, etc.

These criteria are not only problematic in their applicability, but also fail to produce a clear-cut distinction between oblique arguments and adjuncts in Jalonke:

(i) Optionality of ‘oblique arguments’. Candidates for ‘oblique arguments’ are encoded in postpositional phrases. These PPs can be freely ellipsed, as indicated through the brackets in the following two examples.

- (1) *N* *bik* -ɔɔ *nefu* (*Mariama* *ma*).
 1AG pen -DEF lend (Mariama at)
 ‘I lent a pen (to Mariama).’

- (2) *N* *Mariama* *nefu* (*biku* -*na* ‘*a*).
 1SG Mariama lend pen -DEF with
 ‘I lent Mariama a pen (lit.: I lent Mariama with a pen).’

(ii) Availability of syntactic operations such as relativization and passivization. Syntactic tests reveal no differences between oblique arguments and adjuncts either: only direct objects can be passivized (see 8.3.2); but on the other hand, there are no constraints on relativization in terms of grammatical relations (see 2.9.1 below).

(iii) Differences in case marking between arguments and adjuncts. Adjuncts as well as participants that might be subcategorized by a verb can both occur in postpositional phrases, sometimes even in postpositional phrases headed by the same postposition, as in the following two examples. In (3), one would like to classify the PP as an adjunct, whereas in (4), the NP in the PP is more likely to encode a participant entailed by the event that the verb denotes:

- (3) *A* *dii* -*na* *ma-* *xaa* (*saafu* -*na* ‘*a*).
 3SG child -DEF DISTR- wash soap -DEF with
 ‘She washed the child (with soap).’

A BASIC GRAMMAR OF JALONKE

- (4) *Aissatu* *n* *samba* *-xi* (*bireeti* *-na* ‘*a*).
Aissatou 1SG present -PF (bread -DEF with)
‘Aissatu has presented me (with bread).’ Ataya 180

The PP in (4) cannot be promoted to direct object in the case of *samba* ‘present (after displacement of giver)’, although for some verbs, such a promotion is possible, as shown in 4.6. Grammatical relations in Jalonke treat subjects and objects differently from all postpositional phrases, regardless of a possible argument-adjunct distinction within them.

(iv) Semantic necessity of a participant. Semantic factors such as whether a PP encodes a participant entailed by the event that the verb denotes, or a subcategorized adjunct in other terms, are cross-linguistically bad predictors of argumenthood. In Mosetén (Sakel 2003) for instance, there are a transitive and an intransitive verb of eating. In view of this variation in linguistic encoding, it is clear that only syntactic evidence, not hypotheses on semantically necessary participants, can elucidate whether a participant is an argument or an adjunct of a given verb.

The status of PPs as possible arguments is thus unclear. In light of this, only direct arguments are taken to represent a verb’s core, and all postpositional phrases are taken to correspond to its periphery or to adjuncts, regardless of possible semantic factors for classifying a PP as an ‘oblique argument’. Consequently, only direct (i.e. non-oblique) arguments are taken into account when classifying verbs according to their argument structure in chapters 3-6. The only verbs of Jalonke that offer a little evidence for having three arguments comprise some of the verbal notions commonly labeled ‘three-place predicates’ (Austin, Evans & Margetts, in prep.). These verbs, although they only have two syntactically obligatory participants, regularly occur with an optional third participant in a postpositional phrase. For some of the verbs in question, this third participant can be promoted to object and thus offers some evidence favoring its classification as an argument. These verbs are treated along with transitive verbs in chapter 4.

2.3. PHONOLOGY

This section gives the phoneme inventory of Jalonke (2.3.1), states the syllable structure (2.3.2), discusses why Jalonke is not a tone language (2.3.3), and gives an overview of the most important morphophonological processes of the language (2.3.4).

CHAPTER 2

2.3.1. PHONEME INVENTORY

2.3.1.1. VOWELS

Jalonke makes use of a seven-vowel system found in many Mande languages, and also attested for Dialonké (Creissels 1989). The places of articulation for vowels are given in Table 1.

Table 1 The vowel inventory of Jalonke

	Front	Central	Back
High	<i>i</i>		<i>u</i>
Mid	<i>e</i>		<i>o</i>
Low	<i>ɛ</i>	<i>a</i>	<i>ɔ</i>

Vowel length is distinctive; however, as is also the case in Dialonké, monosyllabic content-words always have a long vowel. Within monomorphemic roots, there exists a phonotactic restriction that resembles vowel harmony to a limited degree: a member of the set of mid and low front and back vowels (i.e. /*e*/ and /*ɛ*/, /*o*/ and /*ɔ*/ respectively) only co-occurs with that member of the set that has the same height. This restriction does not apply across morphemic boundaries (cf. *tong-ɔɔ* ‘taking, lit.: take-IPF’) and hence, unlike vowel harmony, is not a morphophonological process, but just a distributional constraint. Like Dialonké, Jalonke has no set of nasalized vowels. Nasalization occurs as a coarticulation effect of a VN sequence.

2.3.1.2. CONSONANTS

The consonant inventory of Jalonke is given in Table 2.

Table 2: The consonant system of Jalonke

	Bilabial	Labio-dental	Dental	Alveolar	Post-alveolar	Palatal	Velar	Uvular	Glottal
Plosive	<i>p b</i>		<i>t d</i>			<i>ʈ</i>	<i>k g</i>		
Nasal	<i>m</i>		<i>n</i>			<i>ɳ</i>	<i>ŋ</i>		
Tap/Flap			<i>ɾ</i>						
Fricative		<i>f</i>	<i>s</i>					<i>χ</i>	<i>h</i>
Approximant						<i>j</i>			
Lateral approximant			<i>l</i>						
Voiced labio-velar approximant	<i>w</i>								

A BASIC GRAMMAR OF JALONKE

The voiceless bilabial stop /*p*/ and the glottal fricative /*h*/ are quite marginal; the former mainly appears in ideophones and loanwords, the latter exclusively in loanwords. The exact places of articulation for the range between dental and postalveolar remain to be established. The alveolar flap /*r*/ does not occur word-initially, with the exception of the causative prefix *ra-* and the homophonous post-position *ra* ‘with’. The palatal approximant /*j*/ is rarely attested. The uvular fricative /*χ*/ is in most contexts realized as a voiceless fricative, sometimes assimilated to a velar place of articulation. Intervocally, sonorization or elision often occurs. In some contexts, especially after pause, /*χ*/ is realized as the uvular stop [*q*]. Since the most widespread distribution is the one with the realization as a uvular voiceless fricative, /*χ*/ has been retained as the phonemic representation for this sound, conflicting with Creissels’ (1989) choice of the uvular stop /*q*/ for the corresponding sound in Dialonké. Nasal consonants in Jalonke distinguish four places of articulation, but exhibit a defective distribution: they contrast only word-initially and intervocally. Word-finally, only /*ŋ*/ occurs.

2.3.1.3. ORTHOGRAPHIC CONVENTIONS

With few exceptions, the orthography employed here is based on IPA symbols. Deviations from the IPA are specified in Table 3.

Table 3 : IPA symbols replaced in the orthography

IPA-Symbol	Orthographic symbol
<i>r</i>	r
<i>ɟ</i>	j
<i>j</i>	y
<i>χ</i>	x
<i>ŋ</i>	n

The enclitic definite marker *-na* is written as a suffix, mainly to distinguish it from the temporal conjunction *na* and the distal demonstrative pronoun *na*. In the remainder of this study, apart from the section on phonological processes, Jalonke examples are represented in terms of surface forms as they were uttered, not including the underlying forms in contexts where assimilations occurred. Elided sounds are signaled with apostrophes, i.e. with ‘ where the elided sound is the word-final segment, and with ‘ where the elided sound is the word-initial segment. For a description of assimilatory processes, section 2.3.4 can be consulted.

CHAPTER 2

2.3.2. SYLLABLE STRUCTURE

Syllables consist minimally of a vocalic (and, in the case of *n* ‘1SG’, nasal) nucleus. This nucleus can be expanded with a consonant onset and a nasal coda, yielding the basic syllable structure (C)V(N). Closed syllables like *nan* ‘FOC’ are only possible with a nasal in the coda, except for ideophones and loanwords. Lexical roots are generally mono- or disyllabic. Monosyllabic content words have the syllable structure CVN or CVV. Complete reduplication of the root occurs, but is, particularly in the case of ideophones, often not a morphological process, because no corresponding simplex form exists, i.e. *tigi* and *tigitigi* ‘INTENS’ vs. **bara*, but *barabara* ‘boil’. In syllable onset, no consonant clusters occur, with the exception of the sequence syllabic nasal plus consonant, as in *nga* ‘mother’, and the sequence consonant plus labiovelar approximant, as in *kwi* ‘in’. Geminated consonants occur in monomorphemic contexts as in *hakke* ‘sin, fault’. Since these clusters are relatively rare and figure mainly in loanwords, no assumption about the syllabification in these words is made. Other consonant clusters appear only at syllable boundaries.

2.3.3. TONE

Jalonke presents no evidence of being a tone language, which is highly uncommon for a Mande language, and asks for an explanation, particularly because the closest related varieties, including Soso and Dialonké, are reported to distinguish two register tone levels. These languages feature tonal minimal pairs as in (5)-(8):

	Soso	Dialonké		Soso	Dialonké	
(5)	<i>sènbé</i>	<i>sèm̀bé</i>	‘needle’	<i>sénbé</i>		‘strength, force’
(6)	<i>yèxé</i>	<i>jèqé</i>	‘sheep’	<i>yéxé</i>	<i>jéqé</i>	‘fish’
(7)	<i>wùré</i>	<i>wùré</i>	‘iron’	<i>wúré</i>	<i>wúré</i>	‘sweet potato’
(8)	<i>xòlí</i>	<i>qòlí</i>	‘urine’	<i>xólí</i>	<i>qólí</i>	‘urge, craving’

(Soso: Batchily (1996); Dialonké: Creissels, ms.)

The cognates of these minimal pairs in Soso and Dialonké are homophonous in Jalonke, as illustrated by the identical fundamental frequency curves for the Jalonke homophones for ‘fish’ and ‘sheep’ in Figure 1 and Figure 2.

Figure 1: *jɛxɛ* 'fish' in the sentence 'I bought a fish.'

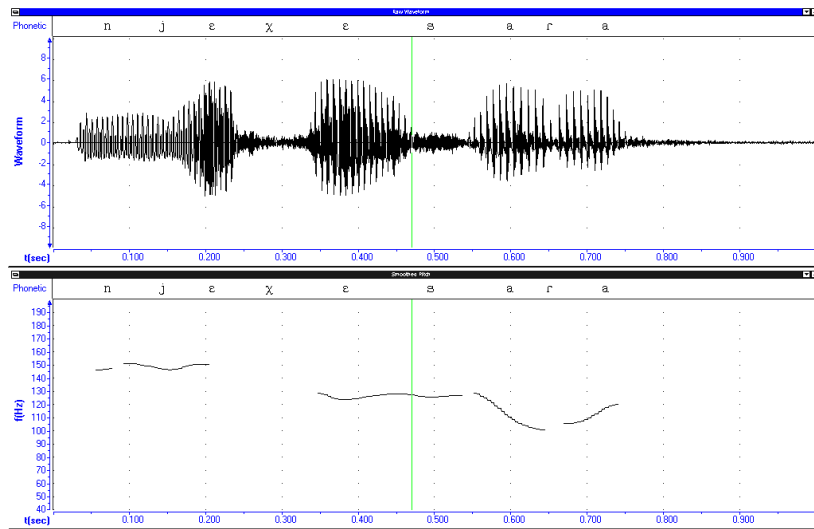
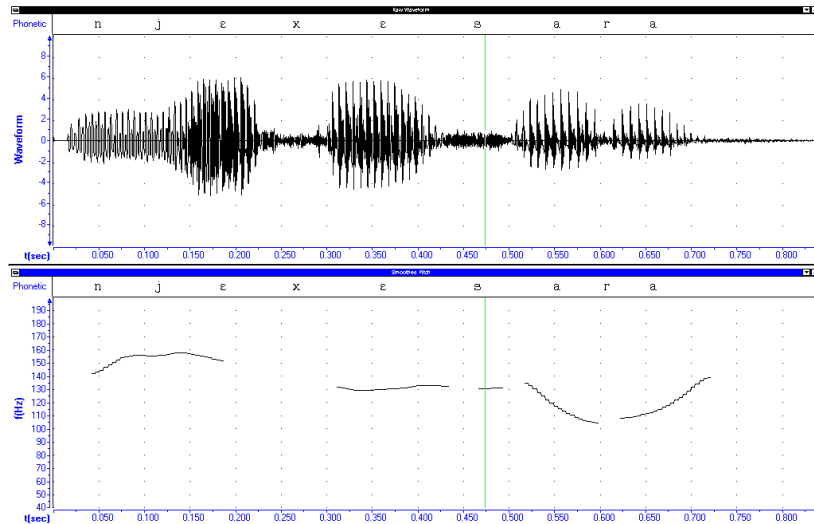


Figure 2: *jɛxɛ* 'sheep' in the sentence 'I bought a sheep.'



If ‘fish’ and ‘sheep’ were tonally differentiated, one would expect them to exhibit the same tonal contrast as the corresponding minimal pairs in Soso and Dialonké do: a high-high sequence in the case of ‘fish’ vs. a low-high(-low) sequence in the case of ‘sheep’ (cf. (6)). As the pitch contours in Figure 1 and Figure 2 reveal, no such tonal contrast is present in Jalonke.

Two comprehension experiments corroborate the lack of a lexical tonal distinction. For these experiments, a Jalonke speaker was given French sentences that contained the equivalent of potential tonal minimal pairs of Jalonke in contexts where both meanings would be appropriate, i.e. ‘I bought sheep.’ vs. ‘I bought fish.’ or ‘The iron is hot.’ vs. ‘The sweet potato is hot.’ (see Appendix 2 for the materials used in the experiments and all the responses). In French, these sentences are of

CHAPTER 2

course not ambiguous, since they involve segmentally different lexemes. This speaker was asked to translate the French sentences into Jalonke, yielding a clear intended meaning – the translational equivalent of the unambiguous French sentence, but presenting a potential ambiguity in Jalonke if no tonal differentiation were present. The resulting translations were played back to consultants who, in turn, had to translate them into French. If a tonal contrast were present, one would predict a close match between the intended meaning of the stimulus sentence and the meaning understood by the consultants. This prediction was not borne out by the experiments, confirming the absence of lexical tone.

The first experiment featured 8 sentences, containing the potential minimal pair *jɛxɛ* ‘fish/sheep’ in different sentence contexts. The three consultants gave the intended meaning – either ‘fish’ or ‘sheep’, but not both – in only 11 cases, or 45.8% of the sentences. The unintended meaning was given in 14 cases, or 58.3% of the sentences. These percentages do not add up to 100%, because in one case, consultant 1 (AB) gave both meanings as possible. Within consultants, the overall tendency was confirmed: consultant 1 (AB) chose the intended meaning in 3 cases, the unintended meaning in 6 cases. For consultants 2 (MAB) and 3 (M. Bala), the ratio of intended vs. unintended meaning was 4:4. Even those consultants who did not give the two possible meanings as a translation equivalent during the experiment commented later that the task was impossible to solve without a disambiguating real-world context, and that they chose one meaning over the other quite arbitrarily.

The second experiment contained the potential minimal pairs *xɔri* ‘bone/grain’, *wure* ‘sweet potato/iron’ and *matii* ‘accompany/sell’. On the basis of these items, 20 French sentences were formed and translated into Jalonke by one speaker. Again, three different consultants were asked to listen to the Jalonke sentences and to translate them into French. In this experiment, the three consultants gave the intended meaning in 36, or 60%, of the cases. They gave the unintended meaning in 33, or 55% of cases. Again, for several sentences, speakers volunteered the two possible meanings, yielding a total higher than 100%. Within consultants, the ratios of intended vs. unintended meanings are the following: for consultant 1 (SKB), it was 14:10; for consultant 2 (MAB), it was 12:13; and for consultant 3 (MD) it was 10:10.²

² For some items, it was clear that certain sentence contexts triggered a preferred interpretation for one, but not the other of the possible meanings. Thus *wure* ‘sweet potato/iron’ was more often interpreted as ‘sweet potato’ in the sentence frame ‘I bought

The acoustic evidence, speakers' intuitions about the homophony of potential tonal minimal pairs, and the results of the experiments converge to demonstrate the absence of tone in Jalonke for the cognates of tonal minimal pairs in the closest related languages and for homophones in Jalonke. No evidence for lexical or grammatical tone was found elsewhere in the language. Since the sister language Soso and the Yalunka variety Dialonké both have maintained lexically differentiating register tones, the question arises how language-internal and contact-induced changes may have led to the loss of tone in Jalonke.

In Soso and Dialonké, tone is mainly, if only for a limited number of lexical items, used for lexical differentiation. In Soso, it also fulfils certain syntactic functions, e.g. for the distinction of possessive constructions from determinative compounds, but only in those phonological contexts in which the nominal suffix *-i* that normally marks the possessor in possessive constructions is neutralized. The number of lexical minimal pairs in Soso is difficult to establish because of the limited examples given by Houis (1963) and Batchily (1996), but they do not seem to comprise more than around twenty lexical items. In view of the limited quantity of lexical data on Dialonké, estimations on the number of minimal pairs cannot be provided. Real-word knowledge permits the disambiguation of these minimal pairs even if they are not tonally contrastive anymore, as is the case in Jalonke. The limited distinctive function of lexical tone, accompanied by the innovation of a new segmental definite marker that contributes to keeping syntactic contexts apart (see 2.6.1) probably made the breakdown of the tonal system of Jalonke possible. Additional language external factors like bilingualism in and prolonged exposure to Fula, a non-tonal language, may also have contributed to the discarding of tone.

wure. and *'I found wure.* than as *'iron*'. Of the 6 cases featuring *wure* with the intended meaning of *'iron*' in contexts of buying and finding, *'iron*' was only selected once, and the consultant gave *'sweet potato*', the unintended meaning, at the same time. In contrast, in the frame *'The wure is hot*', *wure* was slightly more often translated as *'iron*' than as *'sweet potato*'. Of the 6 cases in which the meaning of *'iron*' was intended, *'iron*' was chosen in 5 cases, and of the 6 cases in which the meaning of *'sweet potato*' was intended, this meaning was selected in only 3 cases, showing a preference for the *'iron*' interpretation in that specific context. The influence of the sentence context on the understood meaning is further evidence for an absence of lexically differentiating tone, which could serve to disambiguate them, for the items in question.

CHAPTER 2

2.3.4. MORPHOPHONOLOGICAL PROCESSES

2.3.4.1. PROGRESSIVE NASAL ASSIMILATION

If preceded by a nasal, the flap /r/, as in (9), assimilates to a nasal, i.e. (10):

- | | | | | | |
|------|---|---------------------------------|---------------------------------|----------------------------------|--|
| (9) | <i>Gine</i>
woman
‘You are a woman.’ | <i>nan</i>
FOC | <i>i</i>
2SG | <i>ra.</i>
with | |
| | | | | | |
| (10) | <i>/gine</i>
<i>[gine]</i>
woman
‘We are women.’ | <i>nan</i>
<i>nan</i>
FOC | <i>on</i>
<i>on</i>
1PL.I | <i>ra/</i>
<i>na]</i>
with | Input of process
Nasal assimilation |

2.3.4.2. PROGRESSIVE A-ASSIMILATION

If the central vowel /a/ is immediately preceded by another vowel, it assimilates to its place of articulation, i.e. it gets fronted to /ε/ after a front vowel and moved backwards to /ɔ/ after a back vowel (see examples (16) and (17) in 2.3.4.5 for an illustration).

2.3.4.3. REGRESSIVE COMPLETE VOWEL ASSIMILATION

In a string of two adjacent vowels, the first vowel is completely assimilated to the second vowel, as shown by the underlying forms and their phonetic realizations in the following two examples:

- | | | | | |
|------|---|----------------------------------|--------------------------------|--|
| (11) | <i>/taa</i>
<i>[taa</i>
village
‘in the village’ | <i>-na</i>
<i>-n’</i>
-DEF | <i>i/</i>
<i>ii]</i>
at | Input of process
Vowel assimilation |
| | | | | |
| (12) | <i>/tɔxe</i>
<i>[tɔxe</i>
chicken
‘the chickens ³ ’ | <i>-na</i>
<i>-n’</i>
-DEF | <i>e/</i>
<i>ee]</i>
3PL | Input of process
Vowel assimilation |

³ Harrigan (1963) analyzes the definite plural marker differently for Yalunka. He postulates a definite marker n, fusing with the third person pronoun a to produce the singular definite marker na, and combining with the third person plural pronoun e to yield the plural definite marker ne. Since in Jalonke the plural definite marker nee always occurs with

A BASIC GRAMMAR OF JALONKE

In contexts where both *a*-assimilation and complete vowel assimilation are eligible, *a*-assimilation precedes complete vowel assimilation. The rules are exemplified together with nasal elision in 2.3.4.5. Both processes are not fully applicable to vocalic pronouns, presumably because they would lead to a neutralization of person distinctions.

2.3.4.4. FLAP DELETION

In the verbal prefix *ra-* and the postposition *ra*, the flap is deleted if it is preceded by a lexical NP ending in *a*, as in (13). Flap deletion is blocked after pronominal NPs, as in (14) or in any other sequence featuring the flap between two identical vowels⁴ (15). In the remainder of the thesis, deleted flaps are signaled by an apostrophe.

- | | | | | | | |
|------|-----------------------------|---------|------|-------|------|------------------|
| (13) | /n | biniiri | -na | ra- | bii/ | Input of process |
| | [n | biniiri | -na | 'a | bii] | Flap deletion |
| | 1SG | bottle | -DEF | CAUS- | open | |
| | 'I have opened the bottle.' | | | | | |

- | | | | | |
|------|-----------|------|--|------------------|
| (14) | /a | ra/ | | Input of process |
| | *[a | 'a] | | *Flap deletion |
| | 3SG | with | | |
| | 'with it' | | | |

- | | | | | |
|------|-------------------------|-----|---------|------------------|
| (15) | /n | o | roni/ | Input of process |
| | *[n | o | 'oni] | *Flap deletion |
| | 1SG | 2PL | inherit | |
| | 'I have inherited you.' | | | |

2.3.4.5. INTERVOCALIC NASAL ELISIONS

In intervocalic environments, the nasal of function words such as the definite marker *-na* and the imperfective suffix *-ma* is elided. Equally affected by nasal eli-

a geminated vowel whose existence can only be explained by an assimilation as sketched in (12), I follow Keita's analysis for Dialonké (1987/88) in assuming that the definite plural marker is built up from the singular definite marker plus the plural pronoun. In the remainder of this study, the definite plural marker is written as -nee.

⁴ As mentioned in 2.3.2, *ra* is, apart from very few loanwords, the only word-initial manifestation of the flap. Thus, the assimilation might not be sensitive to morphophonemics but to the phonetic context of the flap between low central vowels, a context that just doesn't exist elsewhere in the language.

CHAPTER 2

sion are the negation marker *mun* and the focus marker *nan*, but with the difference that for these, the final nasal is deleted. These assimilations leave two adjacent vowels, which are then subject of the *a*-assimilation and the complete vowel assimilation stated above, if applicable. The rules and their ordering are illustrated in (16) for the imperfective suffix, in (17) for the definite marker, in (18) for the negation marker, and in (19) for the focus marker.

(16)	/keli-ma/ <i>keli</i> <i>kelie</i> [kel-εε] leave-IPFV	/tongo-ma/ <i>tongo</i> <i>tongoɔ</i> [tong-ɔɔ] take-IPFV	/malabu-ma/ <i>malabua</i> <i>malabuɔ</i> [malab-ɔɔ] rest-IPFV	Input of process 1. Nasal elision 2. <i>a</i> -assimilation 3. Vowel assimilation
(17)	/gine-na/ <i>ginea</i> <i>gineε</i> - woman-DEF	/keri-na/ <i>keria</i> <i>kerie</i> [ker-εε] pick-DEF	/wattu-na/ <i>wattua</i> <i>wattuɔ</i> [watt-ɔɔ] time-DEF	Input of process 1. Nasal elision 2. <i>a</i> -assimilation 3. Vowel assimilation
(18)	/n <i>n</i> [n 1SG ‘I haven’t seen them.’	<i>mun</i> <i>mu</i> <i>m’</i> NEG	<i>e</i> <i>too/</i> <i>e</i> <i>too</i> <i>ee</i> <i>too]</i> 3PL see	Input of process 1. Nasal elision 2. Vowel assimilation
(19)	/gine <i>gine</i> [gine woman ‘You are a woman.’	<i>nan</i> <i>na</i> <i>n’</i> FOC	<i>i</i> <i>ra/</i> <i>i</i> <i>ra</i> <i>ii</i> <i>ra]</i> 2SG with	Input of process 1. Nasal elision 2. Vowel assimilation

Nasal elision does not apply to content words that end in a vowel, as illustrated below for *lan* ‘meet’:

A BASIC GRAMMAR OF JALONKE

(20)	/nxo	lan	a	ra/	Input of process
	[nxo	lan	a	ra]	*Nasal elision
	1PL.E	meet	3SG	with	
	'We have agreed (lit.: met) on that.'				

Nasal elision in function words is blocked in certain phonetic environments. The truncation is blocked in isolation before a pause; i.e. the nasal of the definite marker cannot be elided in the citation form of nouns. Nasal elision is equally ruled out in contexts where it would yield three adjacent vowels, i.e. in bases ending in a long vowel⁵ (21). Nasal elision is also blocked for bases ending in a consonant (22) and in vocalic contexts like (23) where the nasal is followed by two vowels:

(21)	/saa-ma/	/too-ma/	/dɛɛ-na/	/kiraa-na/	Input
	*saaa	*tɔɔɔ	*dɛɛɛ	*kiraaa	*Nasal elision
	[saa-ma]	[too-ma]	[dɛɛ-na]	[kiraa-na]	
	lie-IPFV	see-IPFV	mouth-DEF	path-DEF	
	'is lying'	'is seeing'	'the mouth'	'the path'	

(22)	/don-ma/	/xɛbɛn-na/	/lɛr-na/	/surat-na/	Input
	*dona	*xɛbɛna	*lɛra	*surata	*Nasal elision
	[don-ma]	[xɛbɛn-na]	[lɛr-na]	[surat-na]	
	eat-IPFV	door-DEF	hour-DEF	sura-DEF	
	'is eating'	'the door'	'the hour'	'the sura'	

(23)	/n	a	fala-ma	a	ra	nde/	Input
	*n	a	falaa	a	ra	nde	*Nasal elision
	[n	a	fala-ma	a	ra	nde]	
	1SG	3SG	speak-IPFV	3SG	with	INACT	
	'I will say it to him/her.'						

If a consonant follows the NV sequence, the assimilation is not preempted:

⁵ According to Keita (1987/88), Dialonké has gone one step further. Here, the presence of a long base vowel doesn't block nasal elision and following regressive vowel assimilation. Thus, two forms with three adjacent vowels like jéǽǽ, shortened to jéǽ, for underlying jéǽ-ná 'the water' are admitted.

CHAPTER 2

- | | | | | | | | |
|------|-----------------------------|-----|------------|-------|-----|------|---------------|
| (24) | /n | a | fala-ma | nde | a | ra/ | Input |
| | [n | a | falaa | nde | a | ra] | Nasal elision |
| | 1SG | 3SG | speak-IPFV | INACT | 3SG | with | |
| | 'I will say it to him/her.' | | | | | | |

As becomes evident from (25) and (26), in the appropriate contexts flap deletion occurs before nasal elision, thereby blocking it through the presence of the resulting long vowel:

- | | | | | | | |
|------|--------------------------|-------|------|-------|-------|---------------------|
| (25) | /n | tami | -na | ra- | bira/ | Input of process |
| | [n | tami | -na | ‘a- | bira] | !Flap deletion |
| | | | | | | *Nasal elision |
| | 1SG | stick | -DEF | CAUS- | fall | |
| | ‘I made the stick fall.’ | | | | | |
| | | | | | | |
| (26) | /n | tami | -na | ra- | bira/ | Input of process |
| | [*n | tam | -εε | ra- | bira] | !Flap deletion |
| | | | | | | *Nasal elision |
| | | | | | | *Vowel assimilation |
| | 1SG | stick | -DEF | CAUS- | fall | |
| | ‘I made the stick fall.’ | | | | | |

2.3.4.6. L-GEMINATION

Bases with /l/ as the last consonant, followed by a vowel, exhibit a different form of assimilation when in contact with a NV-sequence. For them, nasal elision also takes place, but the subsequent vowel assimilation is of a different type: while the first vowel of the resulting VV sequence is deleted, the lateral approximant is geminated:

- | | | | | |
|------|-------------------|-------------------|-------------------|-------------------|
| (27) | /jeli-na/ | /nali-na/ | /fali-na/ | Input |
| | <i>jelia</i> | <i>nalia</i> | <i>falia</i> | 1. Nasal elision |
| | <i>jela</i> | <i>nala</i> | <i>fala</i> | 2. Vowel deletion |
| | [<i>jel-la</i>] | [<i>nal-la</i>] | [<i>fal-la</i>] | 3. l-gemination |
| | bard-DEF | pumpkin-DEF | donkey-DEF | |
| | ‘the bard’ | ‘the pumpkin’ | ‘the donkey’ | |

Unlike in Dialonké, *l*-gemination cannot be analyzed in terms of vowel-deletion followed by progressive assimilation of the second nasal to a lateral. Whereas in

Dialonké (Keita 1987/88), nasals always progressively assimilate to a lateral if they are adjacent, in Jalonke, they behave like all other root-final consonants:

- | | | | |
|------|-------------|--------------|-----------------|
| (28) | /taabal-na/ | /sɔndel-na/ | /ampul-na/ |
| | [taabal-na] | [sɔndel-na] | [ampul-na] |
| | table-DEF | candle-DEF | lightbulb-DEF |
| | ‘the table’ | ‘the candle’ | ‘the lightbulb’ |

2.4. MAJOR WORD CLASSES DISTINGUISHED

Whether or not languages universally categorize lexical items in the major word classes of nouns and verbs is a contentious issue (see Plank 1997 for an overview of the wealth of references in this domain). Since CM languages employ little or no category differentiating morphology, it is in dispute whether these languages have a noun-verb distinction and this question is therefore addressed in some detail in 2.4.1. For the category adjective there is now general agreement that it is not a universal category, as initially observed by Dixon (1977) (but see Baker in press). The fact that Jalonke, like many Mande languages, does not have a distinct adjective word class comes thus less as a surprise and will only be sketched in 2.4.2.

2.4.1. NOUN/VERB DISTINCTION

From the very beginning of linguistic description till today, Mande languages have been characterized as languages that have nouns, but no true verbs. Already Delafosse (1929) identifies nouns, pronouns, and particles as the only three lexical categories. This view on the noun/verb distinction in Mande in its most radical form is shared by Manessy (1962) for Mande and Kastenholtz (1979) for Bambara. These authors, like Delafosse, base their judgments on two factors. First, auxiliaries or ‘predicate markers’ fulfill all the functions associated with verbs, like the marking of tense, aspect, and mood, while the words conveying the verbal meaning lack all these functions. Secondly, nouns can never appear underived as the heads of verbal predications but ‘verbs’ – or the words conveying the verbal meaning – can freely undergo category shift to nouns. Consequently, these authors classify Mande ‘verbs’ as ‘verbal nouns’ or ‘verbonominals’. This is a possible analysis for Jalonke, too, where all verbs – for instance *tuu* ‘die’ – can in principle shift to nouns through suffixation of the definite marker, e.g. *tuu-na* ‘death, lit.: die-DEF’.

Other researchers, like Brauner (1973, 1974), Houis (1981), Dumestre (1994), and Koné (1984) for Bambara, Creissels (1983a) for Mandinka, and Keita (1984) for Kita Maninka want to restrict the indeterminacy to the lexical level. At the syntac-

CHAPTER 2

tic level, they argue, the occurrence with different sets of formatives allows the identification of unambiguously verbal or nominal constituents. Moreover, Creisels and Dumestre state that ‘verbonominals’ are more often attested as heads of verbal predications than as heads of NPs. In addition, Dumestre observes that the deverbal derivational suffix *-li* is very rare in conservative varieties of Bambara, where most verbs shift underived to nouns, but is in the course of becoming compulsory as a deverbal derivation marker in urban, more dynamic varieties of the language.

Only two recent descriptions of CM languages, Blecke (1996) for Bozo, and Tröbs (1998) for Jeli, argue in favor of a noun/verb distinction operative at the lexical level. For cases where verbs occur as heads of NPs, they advocate an analysis in terms of conversion from verb to noun. In the two languages in question, however, it is easy to establish a formal distinction, since some verbs morphologically differentiate transitivity and perfectivity of verbs. If verbs have both transitive/intransitive and perfective/imperfective stems, a formal noun/verb distinction is manifest, since only one of the stems can be nominalized. It is thus possible to claim conversion or zero-derivation for the remaining verbs, since the distinction is marked at least for a part of the lexicon.

The situation in Soso is rather different from that in the CM languages mentioned so far. According to Houis (1963), Soso makes use of a ‘nominal suffix’ *-i*. Through fusion with the final vowel of the base this suffix creates nouns that, with the exception of nouns ending in the final stem vowel /a/, end in anterior vowels. For bases ending in a nasal, *-i* yields *-nyi*. While Soso verbs can end in any of the seven vowels of the language and in the velar nasal, nouns are limited to anterior vowels and to the central vowel /a/. The suffix *-i* is present in all syntactic contexts, except when a noun is the first member of a compound. Hence, Soso *-i* corresponds to a stage III definite marker in the sense of Greenberg (1978), which only conveys nominality, not definite or specific reference. In order for Soso verbs to be used as nouns, they have to take the ‘nominal suffix’, and consequently a formal noun/verb distinction is present in most phonetic environments.

In Jalonke, the closest relative of Soso, this ‘nominal suffix’ evidently has become fused with the noun root, and is not used anymore to derive deverbal nouns. Its vestiges, however, can still be traced through the different statistical distributions of the back and front places of articulation for final vowels and of nasal endings in nouns and in verbs, given in Table 4 (The reader is reminded here that words in Ja-

lonke all end in vowels or nasals, cf. 2.3.2). The percentages are based on a lexical database containing 2000 entries, in which ‘verbonominals’, or lexemes that in contrast to nouns occurred as heads of verb phrases, were counted as verbs.

Table 4: Percentages of final segment type by quality for nouns and verbs

Final vowel	% of nouns	% of verbs
Anterior (<i>i, e, ε</i>)	59.4	25.7
Central (<i>a</i>)	18.7	18.0
Posterior (<i>u, o, ɔ</i>)	9.2	21.2
Nasal	12.6	35.2

While the final sounds of verbs are distributed more or less evenly over the different quality types, nouns end disproportionally often in anterior vowels, followed in number by the central vowel endings. Posterior vowels and a final nasal occur least often in nouns. This unequal distribution of final vowels in nouns compared to verbs points to a frozen suffix, now reanalyzed as the final stem vowel. This analysis is supported by the marginal existence of noun-verb pairs with distinct final vowels, the noun ending in an anterior vowel, as for instance in *fɔɔrɛ* ‘black (N)’ vs. *fɔɔrɔ* ‘be black (V)’. Further converging evidence is present in the existence of the compound *sogo-fure* ‘dry season (lit.: sun-be hot)’, where ‘sun’ appears with a back vowel, ‘be hot’ with a front vowel (diachronically bearing the ‘nominal suffix’), although the corresponding free forms are *soge* ‘sun’ with a front vowel (diachronically bearing the ‘nominal suffix’) and *fura* ‘be hot’ with a back vowel. The predominance of nouns ending in front vowels in Jalonke is clearly a trace of a synchronically not productive suffixation. In view of the lack of synchronic category-differentiating morphology, we are left with only one possible criterion in favor of a lexical noun/verb distinction: frequency distributions of nominal vs. verbal uses of the shifting items, that is, the verbs or ‘verbonominals’.

As a by-product of the quantitative study on the discourse reflection of verbal argument structure reported in detail in chapter 9, I also looked at the frequency of occurrence of zero-marked nominal uses of verbs. In a sample of 7063 intonation units, containing a total of 5806 predications, verbs occur as the heads of predications in 5084 clauses. The remaining 722 predications are verbless. In all the intonation units, nominal uses of verbs are present in only 179 cases, or in 3.1% of utterances. Moreover, only 39 verb types (compared to 276 verb types as heads of verbal predications) occur as heads of NPs. The frequencies of nominal and verbal use for these 39 verb types are given in Appendix 3.

CHAPTER 2

What becomes immediately evident from a quick glance at the frequencies of verbal and nominal uses is that those items that occur more than once generally are more frequent as verbs than as nouns. There are five exceptions to this observation: the lexemes *koogu* ‘marry/wedding’, *wale* ‘work (V/N)’, *fori* ‘be old/old person’, *janfa* ‘betray/betrayal’ and *xutu* ‘tie, attach/fetish’ occur more often as nouns than as verbs. For two of these items, *koogu* ‘marry/wedding’ and *janfa* ‘betray/betrayal’, the nominal uses only occur in one text respectively – for *koogu* in a narrative describing marriage customs, and for *janfa* in a text reporting the invasion of the Futa Jalon by the Fula, who were helped by the betrayal of some Jalonke. *Wale* ‘work (V/N)’ and *fori* ‘be old/old person’ have an overall greater frequency as nouns, which makes it plausible that the direction of the shift is from noun to verb rather than from verb to noun. *Xutu* ‘tie, attach’ has acquired a specialized meaning as a noun – it does not mean just anything tied or attached, but only a very specific thing that is worn attached to the body, namely a fetish. Specialized meanings are observable in more cases: *barabara* for instance has the verbal meaning of ‘boil’, but as a noun only designates ‘boiled rice’.

While a detailed comparison of the meanings of nominal and verbal uses is outside the scope of this thesis, the frequencies of uses together with the occasionally appearing changes in meaning favor the following interpretation: ‘verbonominals’ or verbs in shorthand are only marginally attested in nominal use. In the sample of 7063 intonation units, only very few nominal uses of verbs are present, and the majority of verbal lexical items is not attested in nominal use at all. This indicates that the basic use of the ‘verbonominal’ items is – with very few exception – verbal. Moreover, the syntactic context always disambiguates between verbal and nominal uses, yielding clear verbal and nominal constituents. As stated above, in Jalonke, as in CM languages in general, there is a clear lexical category of nouns. We are thus left with the finding that labels for events, or verbs, can be used as syntactic nouns, although for semantic reasons that is not their basic use. On the other hand, however, labels for objects, or nouns, are never used as syntactic verbs. Furthermore, the question of noun/verb distinction never poses itself at the syntactic level: whether a lexeme occurs as a verb or a noun can always be identified straightforwardly through distributional properties. On the basis of these findings, I treat the so-called ‘verbonominals’ as verbs for Jalonke, and attribute their occasional nominal uses to zero-derivation or conversion, leaving the question of underspecification at the lexical level open.

2.4.2. LACK OF ADJECTIVES

In contrast to nouns and verbs, adjectives, even if they exist as a lexical category in a language, often form a closed class (Dixon 1977, Schachter 1985, Sasse 1993). In those CM languages where adjectives with some controversy⁶ are recognized as a word class on the basis of differentiating morphosyntactic criteria, they clearly are limited in number. For Soso, no adjective class has been identified: according to Houis (1963), all modifiers are nouns in a possessive construction; Friedländer (1974) distinguishes qualificative constructions from possessive constructions, but also treats them as nominal. In contrast to most other CM languages, there is no special predicative adjectival or stative construction in Soso, nor a way of formally deriving causative/inchoative verbs from adjectives/stative verbs. These findings are confirmed by Jalonke. States are exclusively lexicalized in verbs. If these verbs are used attributively, they are (with marginal exceptions) perfect participles, reminiscent of the adjectival participles in other languages.

2.5. ADVERBS

Jalonke has a set of adverbs, most of them sound symbolic, which synchronically cannot be analyzed as nouns or verbs. Most adverbs can appear as heads of an NP and are therefore grouped with nominals. Many ‘adverbial’ meanings are, however, expressed by postpositional phrases. These PPs are introduced in the following sections along with adverbs.

2.5.1. ADVERBS OF TIME

Adverbs of time can occur in clause-initial and clause-final position. They comprise the following deictic adverbs:

⁶ Brauner (1974), Houis (1981) and Vydrine (1990) identify adjectives as a separate form class in Bambara. Creissels (1983b) and Koné (1984) analyze the lexemes in questions as stative verbs, although they also appear in attributive functions. Kastenholz (1998) distinguishes between attributive adjectives and stative verbs for Bambara.

CHAPTER 2

(29)	<i>kɔɔrɛɛ</i>	‘now’
(30)	<i>too</i>	‘today’
(31)	<i>tina</i>	‘tomorrow’
(32)	<i>tinaboora</i> ⁷	‘the day after tomorrow’
(33)	<i>xoro</i>	‘yesterday’
(34)	<i>xoroboora</i>	‘the day before yesterday’
(35)	<i>toofare</i>	‘this year’
(36)	<i>taɲuna</i>	‘next year’
(37)	<i>wugera</i>	‘last year’

Other deictic and calendrical adverbial meanings are coded by nouns followed by the postpositions *i* or *ra*, as exemplified in (38)-(42) below.

(38)	<i>gersege-n’ ii</i>	‘in the morning’
(39)	<i>kwɛɛna ‘a</i>	‘at night’
(40)	<i>na wattu-n’ ii</i>	‘at that time’
(41)	<i>simiti-n’ ii</i>	‘on Saturday’
(42)	<i>sunkije-na ‘a</i>	‘during the fasting month’

2.5.2. DEMONSTRATIVE ADVERBS

There are four demonstrative adverbs, *bee* or *beeji* ‘here’ and *menna* or *naa* ‘there’. *Beeji*, *menna* and *naa* are at least etymologically compound. *Beeji* ‘here’ consists of a the base *bee* ‘here’ plus the proximal demonstrative pronoun *ji*. For some speakers, the final vowel of *beeji* is long, yielding *beejii*, which points to an origin of the adverb in a postpositional phrase headed by the postposition *i* ‘at’. The distal demonstrative adverb *naa* most plausibly was originally composed of the distal demonstrative pronoun plus the postposition *ra* ‘with’, which then underwent flap deletion (cf. 2.3.4.4). *Menna* ‘there’ is constituted by the base *men* that synchronically has the temporal meaning ‘still, yet’, but that, given the spatial origin of most temporal operators in Jalonke, most probably goes back to a spatial noun, and the definite marker *-na*. *Menna* enters a postpositional phrase headed by *i* ‘at’ in order to take on adverbial functions.

The demonstrative adverbs can appear on their own as heads of NPs, as in (43) and (44) in subject and direct object position respectively.

⁷ Diachronically, *tinaboora* and *xoroboora* were probably compounds of the simplex adverbs *tina* and *xoro* plus *boore ra* ‘other with’.

A BASIC GRAMMAR OF JALONKE

- (43) *Mɛn -na xa m' aa ra.*
 there -DEF SUBJ NEG 3SG with
 'It isn't there.' Beelidaara 039

- (44) *Tɔxɛ -nee waa -ma, n beeji lii -ma.*
 chicken -DEF:PL cry -IPFV 1SG here find -IPFV
 'When the roosters were crowing, I was arriving here.' Alpha2-163

In addition, they enter postpositional phrases to express motion towards a Goal or away from a Source:

- (45) *Mama -dii -na mini na' i...*
 ancestor -DIM -DEF exit there at
 'The tiny old woman went out of there...' Beelidaara119

2.5.3. ADVERBS OF MANNER

A large subset of adverbs belongs to this class, all of them sound symbolic.⁸ Many of them are highly specialized, modifying only a single verb. Some examples are given in (46)-(49), with the adverbs and their translation equivalents in boldface.

- | | | |
|------|-------------------------|---|
| (46) | <i>gweeli sɔwesɔwe</i> | 'be vividly red' |
| (47) | <i>bigi mutti</i> | 'be very small (of a person)' |
| (48) | <i>siga wurr</i> | 'leave with high speed ' |
| (49) | <i>gii firisifarasa</i> | 'run with large clothes that hinder movement and make a rustling noise ' |

Other verb modifiers expressing manner or degree are expressed by nominalized verbs in postpositional phrases like *a faɲi-na* 'a 'nicely (lit.: 3SG be nice-DEF

⁸ Sound symbolic items are often called ideophones in the Africanist tradition. As first noted by Doke (1935), in many African languages ideophones fulfil primarily adverbial functions. Sound symbolic words also can, however, exclusively be lexicalized as other word classes and have often been assigned word class status based on a combination of phonological and semantic criteria. Apart from the adverbial use illustrated above, Jalonke has also a smaller number of sound symbolic verbs, but is similar to other Mande languages (Dumestre 1998) in terms of the large proportion of sound symbolic adverbs. Whether sound symbolic adverbs in Jalonke should be regarded as a distinct lexical category, hence as ideophones, is left to future research. In the meantime, these adverbs are preliminarily glossed as ideophones.

CHAPTER 2

with)’. Manner adverbs follow the predicate they modify. The only manner adverb that precedes the verb is *ri(dii)*, roughly translatable as ‘in a way, a bit’.

2.6. NOMINALS

Nominals in Jalonke are characterized by their ability to function as heads of noun phrases. Noun phrases are not limited to referential functions but can also predicate in verbless clauses. Although, apart from pronouns, no subclasses of nominals can be distinguished on morphological grounds, different subsets can be established on the basis of the most widespread distribution and function of their members. The following sections describe the structure of the noun phrase (2.6.1), introduce the two attributive possessive constructions (0), give an overview on nominal subclasses (2.6.3), and summarize nominal inflection (2.6.4) and derivation (2.6.5).

2.6.1. THE NOUN PHRASE

A noun phrase in Jalonke consists minimally of a head, which can be a noun or pronoun, as illustrated in (50). (In this section, NPs are given in bold face.)

- (50) ***Kaid*** ***-εε*** *faa*.
 [paper -DEF]_{NP} come
 ‘The paper arrived.’Ataya 034

The head can be accompanied by modifiers, quantifiers, determiners, and numerals. Several modifiers can occur in one NP, but their number rarely exceeds two. Dependent markers, with the exception of demonstratives, always follow their head. Their internal order is modifier followed by quantifier/numeral and determiner. In the presence of a numeral or quantifier, the definite marker is optional.

Modifiers consist mainly of (stative) verbs in the *-xi*-perfect, as in example (51)

- (51) ***Muxi*** ***fura*** ***-xi*** ***-na***
 [person be sick -PF -DEF]_{NP}
 ‘the sick person’

An alternative strategy for attributive expressions, which seems to be more widespread in texts, uses a verbal predicate in a relative clause (see (169) and (170) in 2.9.1 below). A few stative verbs, although they accept verbal TAM-markers in other contexts, can appear without the perfect suffix. These are listed in (52)-(56).

A BASIC GRAMMAR OF JALONKE

- | | | |
|------|-----------------|-------------------|
| (52) | <i>fiixe</i> | ‘be (come) white’ |
| (53) | <i>gweeli</i> | ‘be(come) red’ |
| (54) | <i>fori</i> | ‘be(come) old’ |
| (55) | <i>joore</i> | ‘be young’ |
| (56) | <i>xunxuuri</i> | ‘be small’ |

Example (57) presents an NP containing a modifier (with the perfect marker), (58) one featuring a numeral, (59) a combination of modifier (without perfect marker) and numeral.

- | | | | | | | |
|------|--|---------------------|---------------------|---------------------|-------------|--------------|
| (57) | <i>Xun</i> | <i>dembe</i> | <i>-x’</i> | <i>-εε</i> | <i>lan.</i> | |
| | [head | plait | -PF | -DEF] _{NP} | be nice | |
| | ‘A plaited head is nice.’ | | | | | |
| | | | | | | |
| (58) | <i>Biniiri</i> | <i>naani</i> | <i>saa</i> | <i>-xi</i> | ... | |
| | [bottle | four] _{NP} | lie | -PF | | |
| | ‘Four bottles are lying (lit.: have been laid)...’ | | | | | Pos 46 MD |
| | | | | | | |
| (59) | <i>Tɔxe</i> | <i>fiixe</i> | <i>fidin</i> | ... | | |
| | [chicken | be white | two] _{NP} | ... | | |
| | ‘two white chickens...’ | | | | | Chickens 000 |

Determiners include demonstratives and the definite and indefinite markers. Demonstratives always precede the NP head; the enclitic definite marker occurs NP-finally.

- | | | | | | | | | | |
|------|------------------------------------|------------------|------------|---------------------|---------------|------------|-----------|----------|-------------|
| (60) | <i>Awa,</i> | <i>ji</i> | <i>see</i> | <i>-na</i> | <i>xungoo</i> | <i>-x’</i> | <i>εε</i> | <i>i</i> | <i>de!</i> |
| | Well | [DEM.PROX | [thing | -DEF] _{NP} | be big | -PF | 3SG | at | INT |
| | ‘Well, this thing has become big!’ | | | | | | | | Taajere 063 |

Demonstratives, but not definite markers, can also occur on their own (61). For this reason, and because they occur in a different position with respect to their head noun, they are regarded as heads of a demonstrative phrase (For a diachronic explanation of the inconsistent word order in the NP throughout Mande languages, see 2.2 above).

CHAPTER 2

- (61) *Ji* *naxun* *de!*
 [DEM.PROX]_{DP} be sweet INT
 ‘This is sweet!’

Taaxalumma 015

The structure of the noun phrase can be summarized as in (62):

- (62) Head (Modifier) (Quantifier) (DEF)

The structure of the demonstrative phrase corresponds to (63):

- (63) DEM (NP)

2.6.2. POSSESSIVE CONSTRUCTIONS

Attributive possessive NPs are either constituted by the juxtaposition of two NPs, the possessor NP preceding its head, the possessum NP, or feature the possessive marker between the two NPs. The structure of possessive NPs is summarized in (64):

- (64) NP_{possessor} (POSS) NP_{possessum}

The two types of possessive NPs reflect a distinction between inalienable and alienable possession well known from other Mande languages. The inalienable type consists of the juxtaposition of two NPs:

- (65) *n* *damba* *-na*
 1SG thigh -DEF
 ‘my thigh (i.e. my body part)’

The alienable possessive construction is characterized by a marker, *ma* if preceded by a word ending in a nasal, as in the case of the 1SG pronoun in (66), *a* in the remaining cases (67), which intervenes between possessor NP and possessum NP:

- (66) *n* *ma* *damba* *-na*
 1SG POSS thigh -DEF
 ‘my thigh (i.e. the one I acquired, e.g. a goat’s thigh)’

A BASIC GRAMMAR OF JALONKE

- (67) *i* ***a*** *gine* *-na*
2SG **POSS** wife -DEF
'your wife'

As in many Mande languages, lexical nouns in Jalonke can be grouped into free nouns and relational or inherently possessed nouns. Relational nouns are obligatorily possessed and chiefly comprise kinship terms, body parts and other part-whole relations, some abstract concepts and some nominalized verbs (which show variable behavior under possession, cf. chapter 8). All relational nouns enter the inalienable possessive construction, but not all of the inalienably possessed nouns are obligatorily relational. The details of these cases are discussed in the section on inalienable nominal possession below.

2.6.2.1. NOUNS ENTERING THE INALIENABLE POSSESSESSIVE CONSTRUCTION

Inalienably possessed nouns include all body parts such as (68) and spatial relations as in (69), most, but not all kinship terms, e.g. (70), some abstract concepts such as (71) and (72), as well as certain types of social relations, e.g. (73) and (74).

- | | | |
|------|-----------------|---------------------|
| (68) | <i>xun</i> | ‘head’ |
| (69) | <i>jaara</i> | ‘front’ |
| (70) | <i>xunjaa</i> | ‘younger sibling’ |
| (71) | <i>bili</i> | ‘origin’ |
| (72) | <i>sembɛ</i> | ‘force’ |
| (73) | <i>karamɔxɔ</i> | ‘religious teacher’ |
| (74) | <i>titer</i> | ‘tutor, host’ |

Among the nouns denoting kinship terms, abstract concepts and social relations are some that are not obligatorily relational, i.e. that can also appear unpossessed. This variation is exemplified for the noun *karaməxə* ‘(religious) teacher’, inalienably possessed in (75), and unpossessed in (76):

- | | | | | | | |
|------|------------------------------------|-----------------|-------------|-----------------|-------------|-----------------|
| (75) | <i>Nxo</i> | <i>karaməxə</i> | <i>-nee</i> | <i>mun</i> | <i>tin</i> | <i>i.</i> |
| | 1PL.E | teacher | -DEF:PL | NEG | agree | at |
| | ‘Our teachers didn’t agree.’ | | | | | Maneah 727 |
| | | | | | | |
| (76) | <i>Etydian</i> | <i>-nee</i> | <i>enun</i> | <i>karaməxə</i> | <i>-nee</i> | <i>birin...</i> |
| | student | -DEF:PL | and | teacher | -DEF:PL | all |
| | ‘All the students and teachers...’ | | | | | lettre-3 023 |

CHAPTER 2

It has often been observed (Heine 1997, Nichols 1988) that inalienable nouns form synchronically a closed class in languages that make the distinction between alienable and inalienable nouns, and that all new concepts enter the class of alienable nouns. This is not the case in Jalonke (and in other CM languages (Denis Creissels, p.c.)), where recent loanwords, like *titer*, from French *tuteur* ‘tutor, mentor, host’ can be integrated into the inalienable class. The case of *titer* is not an isolated one – due to contact with French, many previously unknown concepts like designations for occupations (*président* ‘president’, *docteur* ‘doctor’, etc.) or kinship terms cross-cutting established notions of the Jalonke kinship system (*cousin*, *cousine* ‘cousin’, *marâtre* ‘stepmother, i.e. father’s cowife’) are borrowed. These nouns are not all assigned to the alienable class, regardless of their semantics. Thus while designations for occupations appear alienably possessed, kinship terms and social relations like *titer* are inalienably possessed.⁹ Moreover, as is not uncommon in languages that exhibit the two possessive constructions (Chappell and McGregor 1996), a number of nouns can appear in either possessive construction with an accompanying change in meaning. In Jalonke, this variation concerns body part nouns, which appear in the inalienable construction if denoting an ego’s body part (cf. (65) above), but in the alienable construction if denoting a possessed item that is somebody else’s body part (cf. (66) above). Finally, social relations are often construed asymmetrically: religious teachers and mentors are inalienable for their followers, but to them, their pupils are in an alienable relation.

In accordance with the often made observation going back to Uhlenbeck (1917) that the inalienable possession type marks relations that are inherent or given (‘inseparable’ in Uhlenbeck’s terms), I conclude that this semantic motivation is also valid for Jalonke. Relational nouns, and among them nouns expressing part-whole relations like body parts and nouns denoting kinship relations, are the prototypical candidates for inalienable possession. Which relations are construed as inherent in Jalonke does not seem to depend on single notions like control or animacy, but rather on intricate semantic differences incorporating features of social organization, as manifest in the asymmetric construction of certain social relations.¹⁰

⁹ For other inalienably or alienably possessed kinship terms of Jalonke, no French borrowings are attested so far, probably because in many cases, as in the case of ‘mother’ or ‘husband’, their extensions are comparable in the two languages. Since codeswitching occurs frequently, however, I asked consultants to form sentences featuring the French equivalents of kinship terms, and these terms always occurred in the possessive construction in which their Jalonke translational equivalent is used.

¹⁰ Attempts to identify a semantic motivation for the synchronic extension of the two possessive constructions in other Mande languages (cf. Creissels (1983a) for Mandinka;

2.6.2.2. NOUNS ENTERING THE ALIENABLE POSSESSIVE CONSTRUCTION

Alienable nouns include the kinship terms *dii* ‘child’, *manga* ‘husband’, *gine* ‘wife’, some nouns denoting social relations, and all remaining nouns of the language. In general, the construction covers all those relations that are not inherent but which need to be established. It is plausible that diachronically these relations were encoded by an inalienable possessive construction featuring a locative noun. *Ma*, the alienable possessive marker, is still used as a general locative postposition synchronically in Jalonke and other Western Mande languages (cf. Bailleul 1996 for Bambara; Tröbs 1998 for Jeli). Given the recognizable development of postpositions out of lexical nouns in Western Mande languages and the fact that the Bambara locative postposition *má* is cognate to the noun *mǎ* ‘place’ synchronically (Bailleul 1986), it is very likely that the origins of the alienable possessive marking in Jalonke go back to a construction of the sort ‘The Y at X’. Locative constructions following the source schema ‘Y at X’ are identified by Claudi & Heine (1989) and Heine (1997) as one of the most common sources for alienable possession in African languages. Alienable possession does not entail spatial contiguity in the present-day language. It is, however, very probable that originally, the alienable construction came to express all kinds of relations that were not construed as redundantly locative by nature because they were not construed as inherent. The hypothesis of a locative origin of the alienable construction could explain its extension over the three kinship terms ‘child’, ‘wife’ and ‘husband’ in Jalonke: in contrast to the other kin relations, the relationship between spouses is not only established, rather than given, but is defined by spatial proximity, i.e. the living together in one compound. The kinship term ‘child’ in Jalonke does not only cover biological children, but also quasi-adopted children living on the same compound, hence it equally denotes relations defined on the basis of locative contingency rather than on the basis of inherence.

To summarize, it has been argued that there is compelling evidence in favor of a synchronic semantic motivation for the occurrence of nouns in one or both of the possessive constructions of Jalonke. Inalienable nouns denote relations to their possessor that are construed as inherent, while alienable nouns signal relations that have to be established. The members of the two classes are summarized in Table 5.

Grégoire (1984) for several Western Mande languages) employ, apart from the relevance of spatial proximity, notions like submission, control, and/or animacy of the possessum. None of these notions can account for all cases in the languages concerned.

CHAPTER 2

Table 5: Overview of the distribution of nouns in the two possessive constructions

	Inalienable	Alienable
Exclusively realized in one of the two constructions	most kinship terms some abstract concepts spatial relations	‘husband’ ‘wife’ ‘child’
Semantic contrasts	part of own body	part of somebody else’s body
Asymmetries in possessive construction for social relation	‘teacher’ ‘mentor’ ‘priest’	‘pupil’ ‘guest’ ‘follower’

2.6.3. NOMINAL SUBCLASSES

2.6.3.1. PRONOUNS

Jalonke employs only one set of pronouns without distinguishing case. As in Soso and the contact language Fula, in the first person plural, a distinction is made between inclusion vs. exclusion of the addressee(s):¹¹

Table 6: The pronoun inventory of Jalonke

Singular	1	<i>n</i>
	2	<i>i</i>
	3	<i>a</i>
Plural	1 inclusive	<i>on</i>
	1 exclusive	<i>nxo</i>
	2	<i>o</i>
	3	<i>e</i>

The 1SG pronoun *n* has the phonetic form [ŋ] in isolation, but is assimilated to the place of articulation of the following consonant, if there is one. It is the only pronoun that exhibits allomorphy: if preceded by a nasal, it takes an epenthetic vowel and becomes *an*.

¹¹ In fact, as stated by Prost (1982), an inclusive/exclusive distinction in pronouns exists in the Mande languages *Bɔbɔ*, *Bozo*, *Looma* and *Soso*, and in the Atlantic languages *Fula*, *Basari*, *Koniagi* and *Diola*. The Mande languages at issue, with the exception of *Bɔbɔ* and *Bozo*, all belong to Kastenholz’ (1996) Central-Southwestern branch of Mande. If the distinction is not an areal feature, it might well be one of the characteristics of *Soso* (and *Jalonke*) that “link it to Southwestern Mande” (Kastenholz 1995: 52).

A BASIC GRAMMAR OF JALONKE

2.6.3.2. QUANTIFIERS

Quantifiers comprise *nda* ‘some, a certain’, with the plural *nda e*, truncated to *ndee*, *birin* ‘all’ and *goi* ‘much’. With the exception of the first, they occur in NPs containing a definite marker. *Nda* might also be analyzed as the indefinite determiner, but this requires future research.

2.6.3.3. NUMERALS

The numeral system of Jalonke is built on a quinary basis on which a decimal system is superposed: the numerals from ‘one’ to ‘four’ are simplex forms, and the numerals ‘six’ to ‘nine’ are, at least etymologically, compounds consisting of ‘five’ plus one of the simplex numerals. The numbers ‘ten’ and ‘twenty’ are expressed in simplex forms; all other multiples of ten up to ninety are formed by *tɔnge* ‘multiple of ten’ plus the respective number by which ten is multiplied. Table 7 gives an overview of the numeral system and some examples of the formation of complex numerals.

Table 7: Overview of Jalonke numerals up to two thousand

Numeral	Gloss
<i>ken</i>	‘one’
<i>fidin</i>	‘two’
<i>saxan</i>	‘three’
<i>naani</i>	‘four’
<i>suuli</i>	‘five’
<i>senni</i>	‘six’
<i>solofede</i>	‘seven’
<i>solomasege</i>	‘eight’
<i>solomanaani</i>	‘nine’
<i>fuu</i>	‘ten’
<i>fuu nun ken</i>	‘eleven’
<i>mɔxɔn</i>	‘twenty’
<i>tɔnge saxan</i>	‘thirty’
<i>tɔnge saxan nun ken</i>	‘thirty one’
<i>keme</i>	‘one hundred’
<i>keme fidin</i>	‘two hundred’
<i>wulu</i>	‘one thousand’
<i>wulu fidin</i>	‘two thousand’

CHAPTER 2

Ordinal numbers are formed by the cardinal numeral plus the suffix *nde*, the only irregular form being the ordinal numeral ‘first’ that has the form *singe*. Ordinal numerals only occur in NPs marked for definiteness.

2.6.3.4. DEMONSTRATIVE PRONOUNS

Jalonke makes use of two demonstrative pronouns, the proximal *ji*¹² and the distal *na*. The system is speaker-anchored and shows the following extension of the two demonstratives according to spatial distance with respect to the speaker:¹³

Table 8 : Extension of the two demonstratives in Jalonke

Body parts	Contact with body	In arm’s reach	Within reach of other	Within social space of conversation	Immediate lived space (home base)	Used space (space covered by daily travels)	Day’s walk (minor journey – within the horizon)	Many days walk (major journey – beyond horizon)
Personal space			Interactional space		Home range		Geographic (mapped space)	
Small-scale space					Medium-scale space		Large-scale space	
ji ‘proximal’								
			na ‘distal’					

The proximal demonstrative covers ranges from reference to speaker’s own body parts to immediate lived space. The distal demonstrative can be used starting from objects that are out of the speaker’s reach up to long distances. Visibility seems to play a role for the choice of the proximal demonstrative over the distal as well as for accompanying pointing gestures. Pointing gestures are only present for visible referents. In texts, both the proximal and the distal demonstrative can have anaphoric reference.

Demonstratives are often the source for the grammaticalization of definite markers (Greenberg 1978, Lyons 1999). In Jalonke, it is the distal demonstrative *na* that

¹² A possible lexical source for the grammaticalization of *ji* is the noun *jii* ‘hand, arm’.

¹³ The distribution summarized in Table 8 was established with the help of David Wilkins’ *Demonstrative Questionnaire* (Wilkins 1999) and corroborated through the observation of natural data. The scenes given as models in the questionnaire were reenacted by five consultants, and the demonstrative employed as well as accompanying pointing gestures were noted. The overlap in the middle of the range given in Table 8 reflects the cases where consultants weren’t unanimous in their choice of a demonstrative.

apart from its use as a demonstrative has become extended to mark sheer definiteness as an enclitic.¹⁴ The demonstrative *na* and the definite marker *-na* co-occur with each other:

- (77) ...*nxo* *na* *see* *-na* *too...*
 1PL.E DEM.DIST thing -DEF see
 ‘...we saw that thing...’ Labe 137

2.6.4. NOMINAL INFLECTION

2.6.4.1. THE DEFINITE MARKER -NA

Jalonke makes use of a definite marker *-na* which appears as an enclitic of the NP it determines. In Jalonke, definiteness is a rather wide notion, as will become clear from many of the examples throughout the thesis. The exact semantics of the definite marker remain subject of further research. The observed contexts for the occurrence of the definite marker – including the citation form of nouns and reference to non-identifiable entities – and the redundancy of definite marking in demonstrative phrases and possessive NPs suggests strongly that it is best analyzed as a stage II definite marker in Greenberg’s (1978) terms, ranging between definite determination and the signaling of specificity.¹⁵

Some examples must suffice here to illustrate the range of the definite marker. In (78), the object *kul-εε* ‘monkey-DEF’ appears with the definite marker, although generic reference clearly is intended. In (79), only the second clause clarifies that *jenx-εε* ‘papaya-DEF’ is to be understood as a referential entity in that specific case, otherwise it couldn’t be shared with somebody.

¹⁴ Interestingly, Soso has employed the same grammaticalization pattern, but chosen the opposite member of the demonstrative set, grammaticalizing the proximal *yi* into the definite marker *-i* (Houis 1963, Creissels 1991).

¹⁵ Soso has, as it seems, gone one step further: here, the ‘nominal suffix’ *-i* corresponds to a stage III definite marker in that it only conveys nominality (Houis 1963).

CHAPTER 2

- (78) *Est-ce que a kul -εε kolon?*
 (French) 3SG monkey -DEF know
 ‘Does she know monkeys (lit.: the monkey)?’ (Out of a conversation about monkeys where a member of the audience was not sure that I knew what monkeys are.) Ataya 476

- (79) *Aissatu jεnxε -na don -ma, awa,*
 Aissatou papaya -DEF eat -IPFV well
 ‘Aissatou is eating (a) papaya (lit.: the papaya), well,

a nda soo Paate -dii jii...
 3SG some enter Paate -DIM arm
 ‘she is giving some to little Paate...’ Cooking 002

Occasionally, the definite marker appears on objects with generic reference even in negated contexts, as in (80). There, it cannot be determined whether *nal-la* ‘pumpkin-DEF’ is referring in the first clause; in the second clause, however, it is clearly not referring, but still marked for definiteness.

- (80) *N fan, x’ ii nal -la saa -fee -n’ ii,*
 1SG also SUBJ 2SG pumpkin -DEF lie -thing -DEF at
 ‘Me too, if you are about to put (a/the?) pumpkin (lit.: the pumpkin) (into the dish),

n mun nal -la xɔn.
 1SG NEG pumpkin -DEF love
 I don’t like pumpkin (lit.: the pumpkin).’ Ataya 494

2.6.4.2. NUMBER

Number interacts closely with definite marking: only definite NPs are marked for plural. This gives rise to a tripartite system where bases without definite reference are transnumeral, as in the negated sentence in (81), and where number expression is conflated with definite reference.

- (81) *A ten, a mun sii sɔtɔ.*
 3SG EMPH 3SG NEG goat find
 ‘He didn’t get a goat/goats.’ Herikoo 105

A BASIC GRAMMAR OF JALONKE

As argued in footnote 3, the plural marker *e* is suffixed to the definite stem *-na*, which itself seems to be zero-marked for number, creating the truncated *-nee*.

2.6.5. NOMINAL DERIVATION

2.6.5.1. THE DIMINUTIVE -DII

The diminutive *-dii* is homophonous to the lexeme *dii* ‘child’, with which it can co-occur. Some examples may illustrate its use:

- (82) *tumbi* *-dii* *-na*
star -DIM -DEF
‘the little star’

- (83) *dii* *-dii* *-na*
child -DIM -DEF
‘the little child’

- (84) *wantan* *-dii* *-na*
trousers -DIM -DEF
‘the small trousers’

2.6.5.2. THE ABSTRACT SUFFIX -JAA

The suffix *-jaa* derives nouns expressing abstract concepts from concrete nouns, as exemplified in (85)-(87):

- (85) *xeme* *-jaa* *-na*
man -ABSTR -DEF
‘the manhood’

- (86) *xɔɲe* *-jaa* *-na*
stranger -ABSTR -DEF
‘the property of being a stranger’

- (87) *baren* *-jaa* *-na*
parent -ABSTR -DEF
‘the parenthood’

-jaa is predominantly limited to nominal bases, but occurs also with a small number of verbal bases:

CHAPTER 2

- (88) *bemben* *-naa* *-na*
 be fat -ABSTR -DEF
 ‘the obesity’
- (89) *daxu* *-naa* *-na*
 be stupid -ABSTR -DEF
 ‘the stupidity’
- (90) *mugan* *-naa* *-na*
 be composed -ABSTR -DEF
 ‘the composure’

2.6.5.3. THE HABITATIVE -XIE

This suffix only occurs in the plural, probably because inhabitants are construed as a collectivity. It only attaches to toponyms, as in the following examples:

- (91) *Missira* *-xie*
 Missira -HAB
 ‘inhabitants of Missira’
- (92) *Tunteba* *-xie*
 Tunteba -HAB
 ‘inhabitants of Tunteba’

2.6.5.4. THE PRIVATIVE SUFFIX -TARE

-Tare is not limited to either nominal or verbal bases.¹⁶ The following examples illustrate its occurrence with nouns:

- (93) (*muxi*) *xun* *-tare* *-na*
 (person) head -PRIV -DEF
 ‘the headless person’
- (94) (*muxi*) *xaaxili* *-tare* *-na*
 (person) brain -PRIV -DEF
 ‘the stupid person’

¹⁶ *-Tare* is, at least diachronically, not monomorphemic but a combination of a privative suffix (in similar phonological shapes still attested in some Western Mande languages, e.g. Bambara *-ntan*) and the nominalizing suffix *-re*.

A BASIC GRAMMAR OF JALONKE

With verbal bases, *-tare* also derives nouns functioning as modifiers:

- (95) *(Muxi)* *tagan* *-tar* *-εε* *mun.*
 (person) be tired -PRIV -DEF NEG
 ‘There is no tireless one/person.’

- (96) *Muxi* *mun* *kansi* *see* *-tare* *gee* *i.*
 person NEG peanut ripen -PRIV dig out at
 ‘One does not dig out unripe peanuts.’

If the head noun designates a human being, it is often suppressed, as in (93)-(95).

For transitive bases admitting the privative suffix, there are two different syntactic interpretations available: The derived noun can function as a modifier of a head noun that refers to the direct object of the base verb, as shown in (97):

- (97) *Gine* *roni* *-tar* *-εε* *koogu* *daa* *-x’* *εε* *ra.*
 woman inherit -PRIV -DEF marry must -PF 3S with
 ‘The non-inherited woman must be married.’ (It is a custom that widows
 are inherited by male kin relations of their husband, if there are any.)

In the second possibility, the derived noun can be understood as the head of the NP (98) or as the incorporated object of the base verb in a headless NP, as in (99), creating a semantic ambiguity. This ambiguity can only be resolved by the sentential context or by an expansion of the headless NP with an overt head, as in (100):

- (98) *Xalisi* *doni* *-tar* *-εε* *mun* *nafi* *tii.*
 money lend -PRIV -DEF NEG profit stand (up)
 ‘The money that hasn’t been lent creates no profit.’

- (99) *Xalisi* *-doni* *-tar* *-εε* *mun* *nafi* *tii.*
 money -lend -PRIV -DEF NEG profit stand (up)
 ‘The one how hasn’t lent money creates no profit.’

- (100) *Muxi* *xalisi* *-doni* *-tar* *-εε* *m’* *aa* *gii.*
 person money -lend -PRIV -DEF NEG 3SG run
 ‘The person that hasn’t borrowed money doesn’t (need to) run.’

CHAPTER 2

2.6.5.5. THE PRIVATIVE ABSTRACT SUFFIX -TARAŋAA

This suffix is, at least diachronically, composed of the privative suffix *-tare* and the abstract suffix *-naa* introduced in 2.6.5.2. Whether synchronically it is to be regarded as a transparent combination of the two suffixes or whether it is better interpreted as fused because of the vowel assimilation cannot yet be determined. It can be stated, however, that the bases that accept *-tare* take also *-tarānaa*, while the inverse is not true. The privative abstract suffix is not very productive. Some examples for it are given below:

- (101) *xaaxili* *-tarānaa* *-na*
 brain -PRIV.ABSTR -DEF
 ‘brainlessness, stupidity’

- (102) *xungoo* *-tarānaa* *-na*
 be big -PRIV.ABSTR -DEF
 ‘smallness’

2.7. POSTPOSITIONS

Postpositions often have their lexical origin in relational nouns. Some of them are fixed collocations of a noun and a postposition, the noun not being marked for definiteness anymore. Although postpositions still can have some nominal traits, they are defined as a separate word class that expresses mainly topological, but also temporal, causal, possessive, and benefactive relations and that is incompatible with nominal determiners and modifiers.

The distinction between relational noun and postposition is exemplified below, where in (103) a relational noun and in (104) a complex postposition derived from the same noun appear.

- (103) *A* *furi* *-na* *a* *xɔnɔ.*
 3SG stomach -DEF 3SG hurt
 ‘His stomach hurts (him).’ Nga 051

- (104) *A* *pont* *-εε* *dɔxɔ* *maad* *-εε* *furi* *-ma.*
 3SG nail -DEF sit down wall -DEF middle at
 ‘He has put the nail in the middle of the wall.’ Quick-Bala2 000

As in patterns noted for other Western Mande languages (Creissels 1983 for Mandinka, Tröbs 1993 for Manding, Tröbs 1998 for Jeli), postpositions in their spatial

A BASIC GRAMMAR OF JALONKE

use in Jalonke are neutral with respect to differentiation of Location, Path, Source, or Goal. If a directional meaning component is present in a clause featuring a postposition, it is contributed by the verbal predicate, as the following examples with the postposition *kwi* ‘in’ illustrate: (105) constitutes a verbless predication, (106) a predication containing the non-motion verb *sabaana soo* ‘play (lit.: play-DEF enter)’. In both examples, a stative locative relation is expressed by the clause.

- (105) *Jee -na loor -εε kwi.*
 water -DEF jar -DEF in
 ‘The water is in the jar.’ Alpha3-118

- (106) *Nxo saba -na soo banx -εε kwi.*
 1PL.E play -DEF enter house -DEF in
 ‘We played in the house.’ Labe 041

The following two examples feature motion verbs: in (107) the verb encodes movement towards a Goal, in (108) movement away from a Source. As in (105) and (106), the postposition *kwi* is used to specify the ‘search domain’ as it were, in this case the inside of a container.

- (107) *E fow faa, e soo banx -εε kwi.*
 3PL all come 3PL enter house -DEF in
 ‘They all came, they entered the house.’ Nalla 181

- (108) *Boore -nee fop keli banx -εε kwi.*
 other -DEF.PL all leave house -DEF in
 ‘All the others left the house.’ Mburee 158

These examples illustrate an important property of verbs and postpositions in Jalonke: they both encode relations, but with a neat division of labor. The verb lexicalizes the Path relations, such as Source, Goal and Location. The postposition marks the topological or Ground relation, i.e. the highlighted region with respect to a Ground. The terms Figure and Ground are introduced by Talmy (1983, 2000) to designate the object that is located or moves with respect to a reference object in spatial descriptions.

Table 9 gives an overview of the inventory of postpositions¹⁷ in Jalonke, their lexical sources, as far as traceable, and the most common figure-ground relations they

¹⁷ The extensions of postpositions were assessed primarily through the use of the *Topological Relations Picture Book* (Bowerman & Pederson 1993) and the *Picture Series* for

CHAPTER 2

express. If postpositions have extended functions as grammatical markers, the functions of these markers are also given; where a spatial noun is recognizable as the lexical origin of a postposition in Jalonke or other CM languages, the nominal source is listed as well.

Table 9 : Inventory of postpositions in Jalonke

P	Gloss	Source	Gloss	Extension
<i>fari</i>	‘on’	<i>fari</i>	‘upper back’	Vertical support on horizontal surface
<i>kwi</i>	‘in’	<i>kwi</i>	‘interior’	Containment in three-dimensional ground
<i>bun</i>	‘under’	<i>bun</i>	‘underside’ in Soso	Figure with or without vertical support (under/below) to two-dimensional horizontal surface
<i>ma</i>	‘at’	<i>mă</i>	‘place’ in Bambara	Figure without contact next to ground; alienable possessive marker
<i>tagi</i>	‘in the middle of’	<i>tagi</i>	‘waist’	Figure in the horizontal center of a surface
<i>i</i>	‘at’			Location at a ground (ground construed as a point in space), i.e. toponyms; location in time
<i>ra</i>	‘with’			Location of body-parts and parts of wholes at a ground; Marking of comitatives and instruments
<i>xɔn</i>	‘at’			Location at an elongated Ground (creeks, roads, etc.)
<i>bɛ</i>	‘for’			Benefactive; predicative possession marker
<i>fɛɛ-ma</i>	‘beside’	<i>fɛɛ</i>	‘temple’ + <i>ma</i>	Figure without contact beside ground
<i>bili-ma</i>	‘beside’	<i>bili</i>	‘stem, tree trunk’ + P <i>ma</i>	Synonym of <i>fɛɛma</i> ‘beside’ and <i>kankira</i> ‘beside’

Positional Verbs (Ameka, de Witte & Wilkins 1999). These stimuli elicit responses to where-questions. They were used with five consultants per stimulus.

A BASIC GRAMMAR OF JALONKE

P	Gloss	Source	Gloss	Extension
<i>dεε-ma</i>	‘at the opening’	<i>dεε</i>	‘mouth’ + P <i>ma</i>	Figure in or close to the center of a negative space
<i>furi-ma</i>	‘in the middle of’	<i>furi</i>	‘stomach’ + P <i>ma</i>	Figure in the vertical center of a surface
<i>kanki-ra</i>	‘beside’	<i>kanke</i>	‘shoulder’ + P <i>ra</i>	Synonym of <i>fεεma</i> ‘beside’ and <i>bilima</i> ‘beside’
<i>dεε-ra</i>	‘at the opening, but not in the middle’	<i>dεε</i>	‘mouth’ + P <i>ra</i>	Figure in or close to a negative space, but not in the middle
<i>jaa-ra</i>	‘in front of’	<i>jaa</i>	‘eye’ + P <i>ra</i>	Figure without contact in front of Ground
<i>xambi-ra</i>	‘behind’	<i>xambi</i>	‘behind’ + P <i>ra</i>	Figure with or without contact behind Ground
<i>xɔrε-ra</i>	‘in water’			Figure completely contained in water
<i>fɔxi-ra</i>	‘behind’	<i>fɔxi</i>	‘trace’ + P <i>ra</i>	Figure without contact behind Ground
<i>xuji</i>	‘above’	<i>xun</i>	‘head’ + P <i>i</i>	Figure without contact (above) to a surface, no vertical support

2.8. VERBALS

As mentioned in section 2.4.1, verbs have a greater range of syntactic privileges than nouns. All of them can function as constituents of verb phrases, but many of them may also occupy nominal slots without being formally derived. Since many of the properties of verbs are taken up in detail in the following chapters, those discussed later on are only briefly introduced in this sketch. The sections devoted to verbs give a brief account of the verb phrase in 2.8.1; they introduce the marking of tense, aspect, and modality in 2.8.2; and they give an overview of verbal derivation in 2.8.3.

2.8.1. THE VERB PHRASE

Simple verbal clauses (of which examples can be found throughout this study) consist of a finite verb and its arguments and/or adjuncts. In the case of intransitive verbs, a clause is formed by the subject NP and a verb (109); in the case of transitive clauses, of a subject NP, an object NP, and a verb (110). Adjuncts generally

CHAPTER 2

appear rightmost in the clause, as in (111) and (112). The negation marker follows the subject (113).

- (109) *Nxo siga.*
 1PL.E go
 ‘We left’.

- (110) *A band -εε jin.*
 3SG food -DEF cook
 ‘She cooked food.’

- (111) *A faa simiti -n’ ii.*
 3SG come Saturday -DEF at
 ‘He came on Saturday.’

- (112) *A ning -εε xiri luti -na ‘a.*
 3SG cow -DEF attach cord -DEF with
 ‘He attached the cow with a cord.’

- (113) *Nxo mun xalisi sɔtɔ.*
 1PL.E NEG money find
 ‘We didn’t get money.’

Some transitive verbs, especially verbs of psychological state, take sentential complements:

- (114) *Nxo banta a kolon i faa -xi beeji.*
 1PL.E PF 3SG know 2SG come -PF here
 ‘We already know (that) you have come here.’

These complements are not analyzed as objects of the verb, because they never occur *in situ* and instead refer anaphorically to the object of the verb, always present as a 3SG pronoun.

2.8.2. TENSE, ASPECT, AND MODALITY

This section gives an overview of the marking of tense, aspect, and modality in Jalonke. Zero-marked categories are introduced along formally marked categories.

A BASIC GRAMMAR OF JALONKE

Section 2.8.2.1 explores tense marking; section 2.8.2.2 is concerned with aspect marking; and section 2.8.2.3 investigates modality.

2.8.2.1. TENSE

2.8.2.1.1. ZERO-MARKED

All tense markers are optional. They are much more frequent in affirmative contexts than in negative contexts; in negated sentences, the verb is very often zero-marked for tense. In narrative contexts, tense markers are equally rare, unless they are required to encode the non-linear order of an event with respect to a second event.

2.8.2.1.2. THE PAST MARKER *NUN*

Nun locates a situation anterior to the time of utterance. It shows typical properties of a past marker: the marker is not limited to verbs but can also express past-time reference with verbless predications, as in (115). In (116), it combines with a stative verb; in (117) with a predicate in the perfect. The latter combination creates a (result) state that held at some point in the past, equivalent to the English pluperfect.

- (115) ...*a nun naaxan de xən?*
 3SG PAST REL:SG EMPH at
 ‘...what was he after?’ Ataya 158

- (116) *Ji banx -εε nun xungoo.*
 DEM.PROX house -DEF PAST be big
 ‘This house was big.’ (Talking about a house that is now torn down.) Dahl1-003 AB

- (117) *Naaxee birin nun xənɔ -xi, e birin banta jaxan,*
 REL:PL all PAST hurt -PF 3PL all PF be happy
 ‘Those who had become angry, they are all happy now,
- naaxee nun jaxan -xi, e banta xənɔ fɔlɔ.*
 Rel:PL PAST be happy -PF 3PL PF hurt begin
 those who had become happy, they have started becoming angry.’ (Live commentary of a soccer match when the score just had been equalized to 1:1) Soccer2-047

CHAPTER 2

Nun also occurs with the imperfective marker:

- (118) *I nɛn bɔxun -ma naa nun?*
 2SG what vomit -IPFV there PAST
 ‘What were you spitting out there?’Labe 113

As is typical for past markers in CM languages, the position of *nun* is flexible: it can either appear after the subject, as in (115)-(117), or clause-finally, as in (118).

2.8.2.2. ASPECT

In this section, I only briefly introduce the aspect markers of Jalonke. Aspect markers that are relevant for the core chapters of this thesis, because the compatibility of verbs and their meaning with these markers serve as diagnostics for aspectual subclasses of verbs, will be discussed in relation to these verb classes in chapters 3-6.

2.8.2.2.1. ZERO-MARKED

Verbs often have a ‘default aspect’ (cf. Bybee (1994), Bohnemeyer & Swift, (in press) and Comrie (1976)), or a default aspectual interpretation when zero-marked for tense or aspect. In Jalonke, this default aspectual interpretation of the zero-marked stem is imperfective for stative verbs (see 3.3.3 for a detailed discussion and examples). All other verbs, irrespective of their lexical aspect, convey a past perfective meaning if used unmarked for aspect.

2.8.2.2.2. THE INACTUALITY MARKER *NDE*

Nde is an enclitic marker that codes inactuality of an event.¹⁸ The examples (119) and (124) below illustrate the enclitic nature of the inactuality marker: whenever the verb combines with a postpositional phrase, *nde* is moved to its end.

- (119) *E a fala -m' i bɛ nde!*
 3PL 3SG speak -IPFV 2SG for INACT
 ‘They will say it to you!’Ataya 1514

The combination of *nde* with the imperfective, as in (119) and (120), triggers irrealis reference, including futurity, and its combination with the perfect, as in (121),

¹⁸ *Nde seems to be an independent innovation of Jalonke. Neither Houis (1963) nor Friedländer (1974) mention it for Soso.*

A BASIC GRAMMAR OF JALONKE

produces a type of past perfective reference in which the result state of the relevant event doesn't hold any more.

- (120) *On band -εε jin -ma nde.*
 1PL.I food -DEF cook -IPFV INACT
 'We will cook food.' (from a narrative that is about the events of tomorrow.) Tina 032

- (121) *Maimuna mini -xi nde, a yamba keden min,*
 Maimuna exit -PF INACT 3SG tobacco one drink
 'Maimuna had gone out, she smoked a cigarette,

a soo, a dɔxɔ dagi -nee i
 3SG enter 3SG sit (down) mat -DEF:PL at
 she came in, she sat down on the mats.' Labe 211

In combination with the imperfective, *nde* is used in reference to predictions (122) and, here competing with a predicate zero-marked for TAM, generic (123) and habitual situations (124).

- (122) *I tuu -ma nde.*
 2SG die -IPFV INACT
 'You will die.' (Answer to the question: What will happen when I eat this mushroom?) Dahl1-081 AB

- (123) *E xuu (-ma nde).*
 3PL meow -IPFV INACT
 'They meow.' (Answer to the question: What kind of sounds do cats make?) Dahl1-015 AB

- (124) *Fal -la fan, nxo dɔxɔ -ma a fari nde.*
 donkey -DEF also 1PL.E sit -IPFV 3SG on INACT
 'Donkeys, we were also riding them (lit.: sitting on their back).'
 (Context: narrator was describing means of transportation in his youth.) Alpha 155

CHAPTER 2

A combination of *-xi* perfect, inactuality marker, and past marker in the subordinate clause yields counterfactuals, the predicate of the main clause being in the irrealis.

- (125) ... *e nax' e e sɔtɔ -xi nde nun,*
 3PL say 3PL 3PL find -PF INACT PAST
 ‘...they say, if they had obtained them [their baccalaureates]

a saa -ma nde ji kaidi -n' ii.
 3SG lie -IPFV INACT DEM.Prox paper -DEF at
 it [their names] would have appeared in this list.’ Ataya321

Nde clearly has senses of inactuality, but also might be analyzed as an irrealis modality marker. I leave the question of its final classification as a marker of aspect or modality open for the moment.

2.8.2.2.3. THE IMPERFECTIVE MARKER *-MA*

The verbal suffix *-ma* conveys imperfective aspectual value.¹⁹ I define imperfective value, following Comrie (1976: 24), as expressing “explicit reference to the internal temporal structure of a situation, viewing a situation from within”, as in the case of (126).

- (126) *Kade lanseet -εε tongo -xi,*
 Kade razor -DEF take -PF
 ‘Kade has taken the razor,

a dii -na xun -na bii -ma,
 3SG child -DEF head -DEF cut -IPFV
 she is shaving the child’s head,

Hawa nan dɔxɔ -xi naa a kanke i.
 Hawa FOC sit down -PF there 3SG shoulder at
 it is Hawa who has sat down next to her.’ Baptism 002

¹⁹ *The origin of the imperfective marker is probably the general locative postposition ma ‘at’ synchronically attested in Jalonke, which grammaticalized into a progressive/imperfective suffix. This scenario would fit the widely observed nominal periphrastic origin of progressives (Bybee & Dahl 1989, Heine & Kuteva 2002, inter alia).*

The imperfective can occur in the past, as in (118) above and in (127):

- (127) *O nen bande jin -ma nun?*
 2PL what food cook -IPFV PAST
 ‘What were you cooking?’ Labe 044

-Ma also occurs with the inactuality marker, then expressing irrealis or future time reference, as illustrated by (120) above and (128):

- (128) *Awa, too, on summun -ma nde!*
 well today 1PL.I chat -IPFV INACT
 ‘Well, today we will chat!’ Labe 417

The imperfective marker can also encompass habitual meaning:

- (129) *...alla xəntən, n bee, n xaran -ma...*
 god thanks 1SG here 1SG study -IPFV
 ‘...thanks god I’m here, I’m studying...’ (from a letter) lettre2-002

2.8.2.2.4. THE PERFECT MARKERS *-XI* AND *BANTA*

The perfect suffix *-xi* construes a situation in its result state, which still holds at topic time (Klein 1994) or the time interval about which the utterance makes an assertion (see the two verb forms in the perfect in (126) above). It resembles a perfective because it views a situation as bounded, but is here called perfect since the situation always holds current relevance or is a perfect of result unless specified otherwise by a temporal operator.

The second perfect marker of Jalonke, *banta*,²⁰ shows a distribution similar to that of *-xi*. The two perfect markers never co-occur. *Banta* is often used for situations completed against the expectation of the speaker, as in (130). *Banta* does not combine with other TA-markers.

²⁰ This marker, reconstructed by Vydrine (1999) to *bán-Da ‘finished’, is probably older than *-xi*, because it is attested in a number of Western Mande languages: in Soso as bārà, in Maninka as bára or báda, in Koranko as (b)ara (Kastenholz 1987), in Dioula as bàrà (Braconnier 1989).

CHAPTER 2

- (130) *Xiixɔl -la bant' ee suxu?*
 sleep:envy -DEF PF 3PL seize
 ‘Are they (already) tired? (Lit.: Has the envy to sleep already seized them?)’ (in the middle of a conversation, when a part of the audience left) Mburee 241

2.8.2.2.5. THE PROSPECTIVE -FEE

I understand prospective as relating a state to “some subsequent situation, for instance when someone is in a state of being about to do something” (Comrie 1976: 64). The prospective is formed by a nominal periphrastic construction containing a VN-compound whose head is *fee* ‘thing’ in a postpositional phrase with *i* ‘at’:²¹

- (131) ...*ji xuuyi -εε a xun- n' i- tee poot -εε kwi,*
 DEM.PROX frog -DEF 3SG head -DEF IT- ascend glass -DEF in
 ‘...this frog raises its head again in the glass,

a mini -fee -n' i a kwi...
 3S exit -thing -DEF at 3S in
 it is about to get out of it...’ Frog-Alpha 009

2.8.2.3. MODALITY

2.8.2.3.1. ZERO-MARKED

Declarative sentences constitute the most basic sentence type and are zero-marked for modality.

2.8.2.3.2. THE SUBJUNCTIVE

The subjunctive expresses weak obligations (132) and polite commands, purpose (133), and exclamative speech acts (134). The subjunctive can also weaken declarative statements, especially in negated nonverbal predications (cf. (43) above). It is coded by the marker *xa* that in verbal clauses takes the negated form *naxa/nafa* (135).

²¹ Interestingly, Soso also employs *fe* ‘thing’ as part of a periphrastic aspect marking structure, but with imperfective value. The Soso prospective, on the other hand, uses the same marker as the Jalonke imperfective, *-ma*, although according to Friedländer (1974) it can also comprise progressive meanings. For Dialonké, *-fee* is equally reported to encode the progressive, while *-ma* has the same semantics as in Jalonke (Keita 1990). These findings confirm the generally observed relatedness of progressives and prospectives, which are often hard to distinguish.

A BASIC GRAMMAR OF JALONKE

- (132) *A xa a tongo.*
 3SG SUBJ 3SG take
 ‘He should take it.’

Ataya 054

- (133) *E tee -na ‘a- fee -xi naa,*
 3PL fire -DEF CAUS- blow -PF there
 ‘They have lit a fire there

e xa kansi -nee ma- gan.
 3PL SUBJ peanut -DEF:PL DISTR- burn
 in order to roast peanuts.’

Dendelle 018

- (134) *Alla x’ ii kanta!*
 god SUBJ 2SG protect
 ‘May god protect you!’

- (135) *I nafa neemu n ma de!*
 2SG SUBJ.NEG forget 1SG at INT
 ‘You shouldn’t forget me!’

lettre 1-045

2.8.3. VERBAL DERIVATION

Most of the formally marked derivational processes are taken up in detail in chapter 7 as morphosyntactic processes – which change the valence of a verb – and morpholexical processes – which change a verb’s meaning or valence or both. The causative derivation (2.8.3.1) is analyzed as a morphosyntactic process for Jalonke. The distributive derivation (2.8.3.2) and the iterative derivation are taken to instantiate morpholexical processes. Here, just the inventory of markers is given for the sake of completeness. Section 2.8.3.4 inspects the mechanisms to form nouns from verbs.

2.8.3.1. THE CAUSATIVE PREFIX RA-

The causative prefix *ra-* combines with intransitive ((136) and (137)) and transitive verbs ((138) and (139)). In all cases, morphological causativization is a valence-increasing process by which a new Effector is added to the clause:

- (136) *Haamidu mini banxi -n ii.*
 Haamidu exit house -DEF at
 ‘Haamidu left the house.’

CHAPTER 2

- (137) *N Haamidu ra- mini banxi -n' ii.*
 1SG Haamidu CAUS exit house -DEF at
 'I made Haamidu leave the house'

- (138) *N gul -εε fala.*
 1SG lie DEF speak
 'I lied.'

- (139) *N a ra- fala gule -na 'a.*
 1SG 3SG CAUS- speak lie -DEF with
 'I made him lie.'

2.8.3.2. THE DISTRIBUTIVE PREFIX MA-

The derivational prefix *ma-* has been labeled 'distributive' because of its prevalent function of distributing a verb action over several participants, in most cases those encoded by the direct object. This use of the distributive is illustrated in examples (140)-(142). In (140), it is shown how *ma-* affects the object; in (141) it is illustrated that the distributive is incompatible with an object in the singular; and in (142), it is demonstrated that only the base form of the verb is possible with a singular object for the verb *bana* 'castrate'.

- (140) *N ninge -nee ma- bana.*
 1SG cow -DEF:PL DISTR- castrate
 'I castrated many bulls.'

- (141) **N ning -εε ma- bana*
 cow -DEF DISTR- castrate
 *'I castrated the bull much.'

- (142) *N ning -εε bana.*
 1SG cow -DEF castrate
 'I castrated the bull.'

Ma- can also distribute an event over a longer period of time than expected for the base verb. Example (143) illustrates the meaning of the underived verb *bɔmbɔ* 'beat'; (144) illustrates the meaning of the corresponding derived verb with an object in the singular; and (145) illustrates the derived verb with a plural object.

- (143) *N mugar -εε bɔmbɔ.*
 1SG thief -DEF beat
 ‘I beat the thief.’
- (144) *N mugar -εε ma- bɔmbɔ.*
 1SG thief -DEF DISTR- beat
 ‘I repeatedly beat the thief.’
- (145) *N mugare -nee ma- bɔmbɔ.*
 1SG thief -DEF:PL DISTR- beat
 ‘I repeatedly beat the thieves.’

2.8.3.3. THE ITERATIVE PREFIX I-

Where its meaning is not lexicalized, the iterative prefix adds a component of repetition (146) or intensification (147) to the verb meaning, roughly corresponding to English ‘twice, doubly’.²²

- (146) *Kɔnɔ xɔn -dii -na a i- kolon.*
 But bird -DIM -DEF 3SG IT- know
 ‘But the small bird recognized it again (the cat in disguise).’ Canary 036 M.Bala
- (147) *A kɔɔtaa haa a i- kɔɔtaa.*
 3SG be clever until 3SG IT- be clever
 ‘He is that clever, he is doubly clever.’

2.8.3.4. NOMINALIZATION

Jalonke makes use of five different mechanisms in order to derive nouns from verbs. Let us look first at the devices to create subject nominalizations from verbs. The first, syntactic, process to create subject nouns is restricted to transitive verbs, since it consists of the incorporation of the direct object into the verb. The result is a subject or Effector noun:

²² Both the distributive *ma-* and the iterative *i-* occur in a large number of lexicalized cases (see 7.4.1 and 7.4.2 for examples). Often, the derived verbs lack a simplex counterpart. For these reasons, distributive and iterative prefixes are only segmented in the interlinearization if they exhibit semantic regularity and if the verb in question is attested with a monomorphemic root synchronically.

CHAPTER 2

- (148) *mango* *-baa* *-na*
 mango -extract -DEF
 ‘the mango-picker’

- (149) *gemε* *-woli* *-na*
 stone -throw -DEF
 ‘the stone-thrower’

A second type of Effector noun, always constructed with the verb designating the action plus *tii* ‘stand (up)’, is likewise limited to transitive verbs:

- (150) *fala* *-tii* *-na*
 speak -stand (up) -DEF
 ‘the speaker’

- (151) *domi* *-tii* *-na*
 beg -stand (up) DEF
 ‘the beggar’

The third option of forming subject nouns occurs predominantly with intransitive verbs (152), and reflexive-only verbs (153), although it is attested with some transitive roots (154). With transitive roots, however, the resulting noun refers to the object instead of the subject of the corresponding verb:

- (152) *bemben* *-muxi* *-na*
 be fat -person -DEF
 ‘the fat person’

- (153) *gii* *-muxi* *-na*
 run -person -DEF
 ‘the runner’

- (154) *kolon* *-muxi* *-na*
 know -person -DEF
 ‘the known person’

A fourth option of creating subject nouns is valid for only a handful of verbs. It consists of overt derivation with *-re*:

A BASIC GRAMMAR OF JALONKE

- | | | | |
|-------|-------------|------------|------------|
| (155) | <i>muga</i> | <i>-re</i> | <i>-na</i> |
| | steal | -NOM | -DEF |
| | ‘the thief’ | | |

- | | | | |
|-------|-------------|------------|------------|
| (156) | <i>daxu</i> | <i>-re</i> | <i>-na</i> |
| | be stupid | -NOM | -DEF |
| | ‘the idiot’ | | |

Finally, verbs can shift category and appear zero-derived, with the meaning of the nominalization depending on the verb. For transitive verbs, there is a possibility to create object nominalizations (Comrie & Thompson 1985), that is, nouns, which correspond to a typical or cognate object of the base verb:

- | | | |
|-------|------------|------------|
| (157) | <i>don</i> | <i>-na</i> |
| | eat | -DEF |
| | ‘the food’ | |

- | | | |
|-------|-------------------------|------------|
| (158) | <i>fala</i> | <i>-na</i> |
| | speak | -DEF |
| | ‘the speech, the words’ | |

For intransitive and reflexive-only verbs, there are two possibilities regarding the role of the zero-derived noun. For a few verbs, the nominalization is always interpreted as a subject noun:

- | | | |
|-------|--------------------|------------|
| (159) | <i>fori</i> | <i>-na</i> |
| | be old | -DEF |
| | ‘the old (person)’ | |

- | | | |
|-------|--------------------------|------------|
| (160) | <i>gweeli</i> | <i>-na</i> |
| | be red | -DEF |
| | ‘the red (thing/person)’ | |

This interpretation seems to be the exception, however. The majority of verbs of **all** argument structure classes are turned into action nouns when zero-derived to noun:

CHAPTER 2

- | | | | |
|-------|--|---------------------|----------------------------------|
| (161) | <i>mɔɔ</i>
be ripe
'the ripening' | - <i>na</i>
-DEF | (<i>V_{itr}</i>) |
| (162) | <i>tuu</i>
die
'the death' | - <i>na</i>
-DEF | (<i>V_{itr}</i>) |
| (163) | <i>bɔmbɔ</i>
hit
'the hitting' | - <i>na</i>
-DEF | (<i>V_{tr}</i>) |
| (164) | <i>muga</i>
steal
'the theft' | - <i>na</i>
-DEF | (<i>V_{tr}</i>) |
| (165) | <i>dɔxɔ</i>
sit (down)
'the sitting' | - <i>na</i>
-DEF | (<i>V_{caus/inch}</i>) |
| (166) | <i>gii</i>
run
'the running' | - <i>na</i>
-DEF | (<i>V_{refl}</i>) |

To summarize, of the five ways to produce nominalizations, only four are productive in present-day Jalonke. These four strategies consist of OV-compounding and V-*tii*-compounding to create subject nouns from transitive verbs, and V-*muxi*-compounding to create subject nouns from intransitive and reflexive-only verbs and object nouns from transitive verbs, as well as zero-derivation. Some transitive verbs can form zero-derived object nouns. For some intransitive and reflexive-only verbs, zero-derivation yields subject nouns, but for the majority of all verbs, an action nominalization is achieved through zero-derivation to noun. (Causative/inchoative alternating verbs are not separately treated here, because they nominalize according to their two attested argument structures like intransitive and transitive verbs). The productive mechanisms for nominalization are summarized according to argument structure class of the base verb in Table 10:

Table 10: Productive mechanisms for nominalization in Jalonke according to argument structure class of the base verb

Argument structure class	Subject (Effector) nominalization	Object nominalization	Action nominalization
Intransitive	V- <i>muxi</i> (N=S of base verb) V	n.a.	V
Transitive	OV V- <i>tii</i>	V V- <i>muxi</i> (N = O of base verb)	V
Reflexive-only	V- <i>muxi</i>		V

2.9. CLAUSE, PREDICATION AND SENTENCE TYPES

The present section limits the investigation of clause types to relative clauses, which are treated in 2.9.1. Further, the section introduces verbless predications in 2.9.2, and gives an overview of the main sentence types in 2.9.3.

2.9.1. RELATIVE CLAUSES

Jalonke employs corelatives (Keenan 1985), that is, relative clauses that are not NPs but resemble subordinate clauses: they cannot stand alone, and they contain a relative marker that indicates that the relativized NP will be referred back to in the following main clause but otherwise resemble sentences. Corelatives are mainly attested in verb-final languages, but specifically in ‘loose’ verb-final languages such as Mande languages, which allow postpositional phrases following the verb. Corelatives, along with headless internal relative clauses (Bird 1968, although this characterization is a matter of debate, see Creissels 2000) are common in CM languages.

In Jalonke, the relative pronoun *naaxan* (PL *naaxee*) appears in initial position of the corelative clause. The subordinate clause containing the relative marker is always the first clause, followed by the main clause. All arguments and adjuncts in a sentence can be relativized. (167) gives an example of the relativized NP being the subject of an intransitive relative clause; (168) illustrates the relativized NP as the subject of a transitive relative clause. (169) features an NP as the direct object of

CHAPTER 2

the relative clause, and (170) presents an adjunct as relativized NP. Corelative clauses in Jalonke are often headless, as in (169) and (170).

- (167) *Mux -εε naaxan fow nɔn faa -ma dii -ra- -mini i.*
 person -DEF REL all DISC come -IPFV child CAUS exit at
 ‘The people who are all coming to a baptism,

e taam -εε sɔt -ɔɔ nde.
 3PL taami -DEF find -IPFV INACT
 they will get *taamina* (a special bread).’

Diiram 054

- (168) *N naaxan a fala -m’ i bε jεε,*
 1SG REL 3SG speak -IPFV 2SG for PART
 ‘I, who am talking to you now,

n saa -xi saar -εε ma.
 1SG lie -PF bed -DEF at
 I am lying on the bed.’

Jigijanna 057

- (169) *Tumaani xupaa -na naaxan jin -xi, n a don.*
 Tuumani younger sibling -DEF REL cook -PF 1SG 3SG eat
 ‘Tumaani’s younger sister, what she had cooked, I ate it.’

Labe 078

- (170) *Neene Siree on samba -xi naaxan na, i a xani.*
 mother Siree 1PL.I present -PF REL with 2SG 3SG send
 ‘What mother Siree presented us with, you sent it.’

Labe 501

2.9.2. VERBLESS PREDICATIONS

2.9.2.1. CLASS INCLUSION AND EQUATION

The concepts of class inclusion and equation (of the identity of subject referent and predicate nominal) are not formally differentiated in Jalonke. Both are expressed by the focus marker *nan* and a postpositional phrase containing *ra* ‘with’:

- (171) *Gine nan a ra.*
 woman FOC 3SG with
 ‘She is a woman.’

Jiba 016

A BASIC GRAMMAR OF JALONKE

- (172) *N baaba nan a ra.*
 1SG father FOC 3SG with
 ‘He is my father.’

The negated form of this construction does not feature the focus marker *nan*:

- (173) *Gine m' aa ra.*
 woman NEG 3SG with
 ‘She is not a woman.’

- (174) *N baaba m' aa ra.*
 1SG father NEG 3SG with
 ‘He is not my father.’

The same construction can feature a verbal predicate in focus, as in (175):

- (175) *A a ra- tee na' a ra.*
 3SG 3SG CAUS- ascend FOC 3SG with
 ‘He **lifted** it.’

Ndereji 164

2.9.2.2. LOCATION

The location of a Figure (or the thing to be located) with respect to a Ground (or the landmark object) is minimally encoded by the juxtaposition of an NP and a postpositional phrase:

- (176) *Biniir -εε taabal -na fari.*
 bottle -DEF table -DEF on
 ‘The bottle is on the table.’

Pos1-5 37 MAB

- (177) *Superefε -na Missira i.*
 underprefect -DEF Missira at
 ‘The underprefect is in Missira.’

This construction is the preferred description of canonical Figure-Ground relations. Optionally, it can be expanded by a positional verb. The less canonical the posture of the Figure, the higher is the probability of a verbal predicate. Example (178) illustrates such a non-canonical position for a bottle as the Figure. In Jalonke, the canonical position for bottles is to ‘sit’ on their bases, as in (176), where no verb is

CHAPTER 2

used. In example (178), a bottle is lying on a rock, hence a positional verb is present.

- (178) *Biniir -εε saa -xi gem -εε fari.*
 bottle -DEF lie (down) -PF rock -DEF on
 ‘The bottle is lying on the rock.’ Pos1-5 26 SKB

2.9.2.3. EXISTENCE

The demonstrative adverb *naa* serves to assert the existence of an entity at a not further specified place:

- (179) *Danyan -na naa...*
 rooster -DEF there
 ‘A rooster was there...’ Maamadiina 085

- (180) *Tumaani neene naa?*
 Tumaani mother there
 ‘Is Tumaani’s mother (still) alive (lit.: there)?’ Labe 148

Another possibility of expressing existence, preferably used for the presentation of a new entity into the discourse, consists in the focus marker followed by the particle *jεε*. *Jεε* is most plausibly a truncation of the proximal demonstrative pronoun *ji* and the definite marker *-na*.

- (181) *Banxi nan jεε, muxi mbule nan jεε ...*
 house FOC PART person blue FOC PART
 ‘There is a house, there is a blue person...’ ECOM-B5 M

Zero existentials are limited to negation of existence (cf. (95) above). Negated existentials can be optionally expanded by the distal demonstrative adverb *naa*.

2.9.2.4. PREDICATIVE POSSESSION

Permanent and social possession (Heine 1997) is conveyed through a possessive NP followed by the postposition *bε* ‘for’:

- (182) *Xii -de m’ aa bε.*
 sleep -place NEG 3SG for
 ‘He had no place to sleep.’ Jata 006

Physical and temporary possession²³ are coded by the body part terms *jii* ‘arm, hand’ (183) and *xun* ‘head’²⁴ (184), the latter being limited to small objects like money, books, etc.

(183) *Ōtə -na n jii.*
 car -DEF 1SG hand
 ‘I have a car (at my disposal, lit.: my hand).’

(184) *Xalisi -na n xun.*
 money -DEF 1SG head
 ‘I have money on me (lit.: my head).’

That the examples above do not entail ownership becomes clear from the sentence in (185), which is compatible with both (183) and (184).

(185) *Kənə, n gwee m’ aa ra.*
 But 1SG possession NEG 3SG with
 ‘But its not my property.’

2.9.3. SENTENCE TYPES

This section gives a brief overview of sentence types and treats declarative sentences (2.9.3.1), interrogative sentences (2.9.3.2), and imperative sentences (2.9.3.3).

2.9.3.1. ZERO-MARKED

Declarative sentences are the most basic sentence type of Jalonke. They are not segmentally marked and are pronounced with a falling intonation contour.

2.9.3.2. INTERROGATIVE SENTENCES

There are several types of interrogative sentences. The simplest information question type is marked with a rising intonation contour only. It can be turned into a tag

²³ Physical possession is defined by Heine (1997:34) as having the “possessor and the possessee [...] physically associated with one another at reference time”. Temporary possession is characterized by the fact that “the possessor can dispose of [sic] the possessee for a limited time but s/he cannot claim ownership to it”.

²⁴ *Jii* and *xun* are not included into the set of postpositions, because they appear obligatorily possessed by human beings and have not (yet?) been extended to inanimate Figures. They are thus closer to relational nouns than to postpositions, although most postpositions clearly originate in relational nouns.

CHAPTER 2

question by means of the question particles *kori* (186), appearing leftmost in the sentence, or *ka* ‘or’ (187), also used for disjunction, appearing in leftmost or rightmost position in the sentence.

- (186) *Kori tanaa mun?*
 PART bad NEG
 ‘Isn’t there (any) bad?’ (Part of a greeting) Ibrahim 000

- (187) *I mun an ma fee kolon ka?*
 2SG NEG 1SG POSS thing know PART
 ‘You don’t know my affairs, do you?’ lettre1-004

Wh-questions make use of the following question particles:

- (188) *nde* ‘who’
 (189) *nen* ‘what’
 (190) *kii dii* ‘how’
 (191) *wattu munnun* ‘what’
 (192) *min de i* ‘where’

The questioned constituent remains in *situ*. Answers to questions follow the agree/disagree system (Payne 1997), i.e. when the answer agrees with the question in polarity, no negation particle occurs; when the answer disagrees with the question in polarity, it is negated:

- | | |
|---|---|
| <p>(193) <i>Haamidu faa?</i>
 Haamidu come?
 ‘Did Haamidu come?’</p> <p><i>Ɔɔwun, a faa.</i>
 yes 3SG come
 ‘Yes, he came.’</p> <p><i>Ɔɔ, a mun faa.</i>
 no 3SG NEG come.
 ‘No, he didn’t come.’</p> | <p><i>Haamidu mun faa?</i>
 Haamidu NEG come
 ‘Didn’t Haamidu come?’</p> <p><i>Ɔɔwun, a mun faa.</i>
 yes 3SG NEG come
 ‘Yes, didn’t come.’</p> <p><i>Ɔɔ, a faa.</i>
 no 3SG come
 ‘No, he came.’</p> |
|---|---|

2.9.3.3. IMPERATIVE SENTENCES

Imperative sentences are not treated under the heading of modality, because commands or imperative sentences do not involve a special paradigm of markers. The imperative singular (194) is expressed by the verb stem (plus the object in the case of transitive verbs). The imperative plural (195) is expressed by the 2PL pronoun (and the object if the verb is transitive) plus the verb stem.

(194)	<i>Siga!</i>		<i>Jee</i>	<i>-na</i>	<i>baa!</i>	
	go		water	-DEF	draw	
	‘Go!’		‘Draw water!’			
(195)	<i>O</i>	<i>siga!</i>	<i>O</i>	<i>jee</i>	<i>-na</i>	<i>baa!</i>
	2PL	go	2PL	water	-DEF	draw
	‘You go!’		‘You draw water!’			

2.10. SUMMARY

This chapter has outlined essential grammatical features of Jalonke. Questions of particular importance for Mande languages in general have been addressed in some detail, such as the absence of lexical tone in Jalonke (2.3.3) and the status of noun/verb distinction in the language (2.4.1). It has been shown that, although many verbs can have zero-marked nominal uses, their most widespread distribution in texts is the one as heads of verbal clauses, and that most verbs are not attested at all as nouns. Moreover, while many, though not all verbs can function as constituents of noun phrases, nouns can never appear as constituents of verb phrases. Therefore, the categories verb and noun are posited as lexical categories of Jalonke. The two possessive constructions of Jalonke have also given some attention (0) in order to prepare the ground for the discussion of verbs in these construction in chapter 8.

The grammatical sketch of this previously undescribed language has made a contribution to the description of Mande languages. As such, it is relevant to Mande linguistics and descriptive linguistics in general. The sketch is based not only on qualitative data, but also uses quantitative data based on stimuli (the data on postpositions in 2.7) and the account of demonstrative pronouns in 2.6.3.4), two experiments (the data on tone in 2.3.3), and a corpus study (the data on noun/verb distinction in 2.4.1). The data based on stimuli lend themselves to direct cross-linguistic comparison through the assessment of other languages through the same stimuli. The experimental data allow for a replication and verification of the results

CHAPTER 2

for Jalonke and other languages. And finally, the data from the corpus study permit the quantification of phenomena and hence reinforce the analysis proposed here.

The next four chapters are devoted to the three large argument structure classes of Jalonke and their category-establishing properties, which have only been mentioned so far. Chapter 3 establishes the class of intransitive verbs, followed by the class of transitive, causative/inchoative alternating, and reflexive-only verbs and their characteristics in chapters 4-6.

LEXICAL ARGUMENT STRUCTURE – INTRANSITIVE VERBS

CHAPTER 3

3.1. INTRODUCTION

This and the following three chapters are concerned with the properties that establish the basic argument structures of Jalonke verbs. The present chapter starts this survey with the investigation of intransitive verbs. In view of the goal of this study to determine the semantic motivation underlying the membership of verbs in an argument structure class, I establish semantically motivated subclasses for intransitive verbs. Since, as will be demonstrated below, three different temporal event structure types are attested as intransitive verbs in Jalonke, and since some event structure types are attested in different argument structure classes, the temporal properties of the event structure alone cannot be a predictor of argument structure class membership. A similar restriction holds for causation types as a criterion determining argument structure. Uncaused verbs appear not exclusively as intransitive verbs – a number of them can participate in the causative/inchoative alternation and thus also allow externally caused construals. Therefore, it is expected that neither temporal nor causal features of the event structure alone, but a combination of the two, govern the lexical argument structure class membership of verbs, and it is the aim of this and the following chapters to reveal the interaction of these two criteria. It is further expected that the likelihood of an event to be construed as uncaused vs. externally caused determines the membership of verbs with the same temporal properties in different causation types and hence delimits their argument structure options. The cut-off points for Jalonke verbs along this criterion will be examined in 6.5, where a summary on all the argument structure classes of Jalonke and their members will be given.

CHAPTER 3

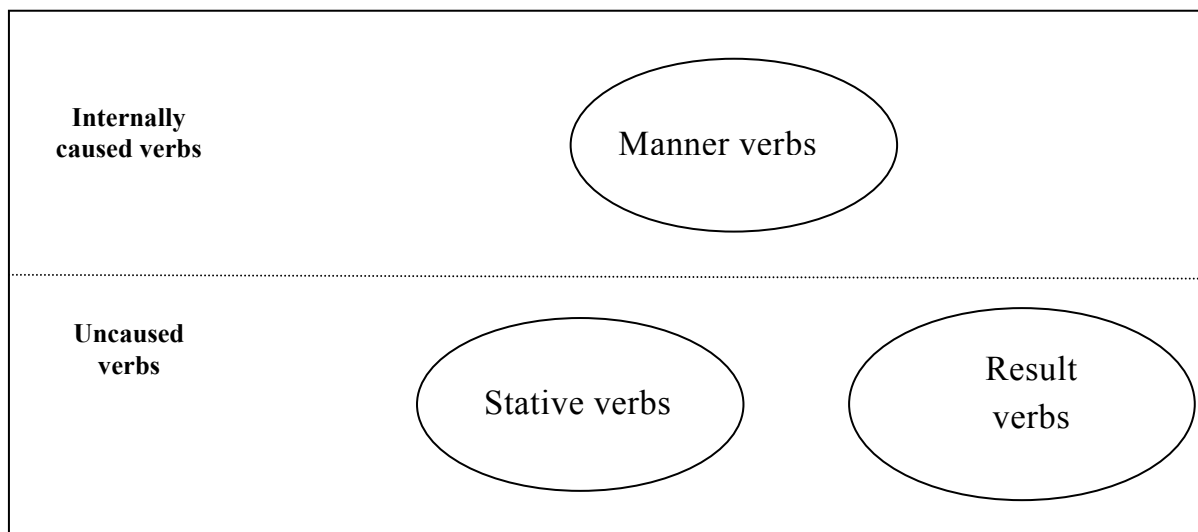
Central issues for the argument structure class of intransitive verbs thus comprise:

(i) Their causation types. Section 3.2 investigates the properties that differentiate intransitive verbs from transitive verbs (studied in chapter 4); namely that intransitive verbs denote events that are construed as internally caused by their single participant or not externally caused, and hence uncaused. Transitive verbs exclusively denote events that are construed as externally caused. Reflexive-only verbs are motivated by a positive specification for control in the sense of Klaiman (1991, 1992), as argued in chapter 6. The only overlap of causation type of intransitive verbs with another argument structure class is present with the existence of verbs denoting uncaused events in the intransitive alternants of causative/inchoative alternating verbs. These verbs are examined in detail in chapter 5.

(ii) The temporal properties of their event structure. Intransitive verbs comprise manner or process verbs, discussed in 3.3. Manner verbs lexicalize the manner in which the action denoted by the verb is performed and do not denote a change of state. Intransitive verbs further include pure verbs of change of state or result verbs, which only code the result of the action denoted by the verb, without committing themselves to the manner in which that result state was achieved. Intransitive result verbs are treated in 3.4. Finally, among intransitive verbs are many stative verbs, characterized by a lack of dynamicity in their basic event structure. Stative intransitive verbs are investigated in 3.5. Typical members of these three subclasses of intransitive verbs as well as their temporal properties and participant structures are treated in turn. For reasons of space, not all members of a given subclass are listed in the main text; for a complete list, see Appendix 4. A further split of intransitive verbs manifest in the type of possessive constructions that they enter when nominalized is discussed in the context of unaccusativity in chapter 8.

Figure 1 illustrates the two causation types for intransitive verbs and how the different temporal event structure classes are distributed over these causation types.

Figure 1: Temporal event structure classes for intransitive verbs and their causation types



For stative verbs, a further issue is of relevance: the availability of state change readings under the appropriate circumstances. It is argued in 3.5.3 that the availability of state change readings with stative verbs may be accounted for in terms of the distinction between stage-level or permanent and individual-level or transitory states (Carlson 1977, 1980). A summary (3.6) resumes the common properties of the class of intransitive verbs in Jalonke.

3.2. INTRANSITIVE VERBS AS DENOTING INTERNALLY CAUSED OR UNCAUSED EVENTUALITIES

Intransitive verbs in Jalonke are defined in terms of one overarching property: they cannot be the heads of transitive clauses unless they have been morphologically causativized. (The reader is reminded here that only clauses with two direct arguments are counted as transitive in Jalonke, for reasons given in 2.2.3 and 2.8.1.1.) Although the different mechanisms to express causation are the subject of chapter 7, this fact should be remembered in anticipation of the detailed account of causativization patterns. So far, 152 intransitive verbs are contained in my Jalonke lexicon. Two verbs classified as intransitive in the lexicon can have a transitive argument structure in limited cases (see 3.3.2 and 7.4.4). A class of verbs that alternate between transitive causative and intransitive inchoative uses and thus exhibit polysemy, is treated separately in chapter 5, because of the ambiguous readings of these verbs in their intransitive uses. For the overwhelming majority of underived intransitive verbs, however, their inability to alternate between intransi-

CHAPTER 3

tive and transitive uses is relevant to the claim that these verbs denote internally caused or uncaused eventualities – these events cannot be construed as directly externally caused.

The difference between internally caused and uncaused verbs is confirmed through the meaning of the causative marker *ra-* with the two classes: as shown in 7.3.1.2, all intransitive verbs can only have externally caused uses when morphologically causativized. While for a morphologically causativized internally caused verb, causation can only be indirect, for a morphologically causativized uncaused verb causation can also be understood as direct.

Intransitive verbs are further distinguished from transitive verbs through the mechanisms which form nominalizations (see 2.8.3.4) – intransitive verbs form subject nouns through VN compounds headed by *muxi* ‘person’ and subject or action nouns through zero-derivation. Transitive verbs, in contrast, form subject nouns through object incorporation or VV compounding with *tii* ‘stand (up)’ as the second verb, object nouns through V-*muxi* compounding, and object or action nouns through zero-derivation.

Internally caused verbs on my account correspond to verbs that are, as remarked by Levin & Rappaport Hovav (1995) and Smith (1978), very limited in the participants they allow. The class of internally caused verbs in Jalonke comprises most verbs of emission and bodily processes such as *gɔngɔn* ‘bark’ (which can be predicated only of dogs), *jambalin* ‘shine’ (of the moon, stars, light bulbs or flashlights), or *xuruxan* ‘snore’ (of human beings and higher animals that make a snoring noise when sleeping). Internally caused verbs include those verbs that always have animate participants (*jele* ‘laugh’) and therefore might wrongly be thought of as agentive. Internally caused verbs also include verbs that are not (necessarily) agentive (*tɔxun* ‘cough’, and *waa* ‘cry’) but with a few exceptions likely to be limited to animate participants. With respect to their event structure, internally caused verbs in Jalonke are manner or process verbs. Note that that non-internally caused manner verbs, such as ‘roll’ and ‘swing’, attested as intransitive or causative/inchoative alternating verbs in many languages, are lexicalized as non-alternating transitive verbs in Jalonke, and thus presumably denote externally caused events. This is a typologically very interesting finding and adds to the evidence that Jalonke is a ‘fundamentally transitive’ language (Nichols 1981, 1982, 1993, Nichols *et al* 1999) that has a preference for lexicalizing events in transitive verbs. While it is possible to identify intransitive manner verbs as internally caused

verbs in a quite straightforward way, the classification of stative verbs in terms of the distinction internally caused vs. uncaused is more difficult, if not impossible. Levin & Rappaport Hovav (1995) attempt to motivate the contrast between individual-level states and stage-level states (a distinction that is introduced properly in 3.5.3 below) in terms of the former being internally caused, and the latter being externally caused. For Jalonke, no such clear-cut coextensiveness between causation type and individual vs. stage level is discernable; and as discussed in 5.3.2, it is questionable whether such a coextensiveness can be observed cross-linguistically.

The majority of intransitive verbs in Jalonke are not internally caused verbs on the argument defended here. These other verbs, which denote changes of state or location or are vague between a stative and a state-change reading, are analyzed here as uncaused verbs. Rappaport Hovav & Levin (1995) predict that these verbs of change of state (which are internally caused on their account, but not on mine) should exhibit stronger selectional restrictions on their single argument than externally caused verbs on their Causer argument. Some of the uncaused verbs of Jalonke are indeed more limited in the range of participants they occur with than others, but for all of them, this range is larger than for internally caused verbs. To take the example of *faa* ‘come’, a verb of change of location, it allows people, cars, rain, the sun, seasons, letters, hunger and suffering as its single argument. Likewise, many intransitive verbs of (change of) state¹ can appear with a large number of participants as subject. In the case of *mɔɔ* ‘be ripe’, the verb can be predicated of girls that are in the age to be married off, all kinds of fruit and vegetables, but also of food that is ready to eat and tea that is ready to drink. Only in the case of girls, fruit, and vegetables one would like to say that the change of state comes about through inherent properties of the participant. For food and tea on the other hand, it is evident that these entities have no natural inclination to ripen – somebody has to assemble the necessary ingredients and to put them on a fire before they even come into existence as the result of the verb action. This – clearly external – cause is, however, not part of the verb’s meaning. Whether the events denoted by these verbs are optionally construable as internally caused when predicated of a human subject or not, the verbs merely lexicalize the result state of a change of state, hence the corresponding events are construed as uncaused. A few intransitive verbs of (change of) state might be said to denote internally caused eventualities, such as *bɔrɔ* ‘be moldy, rotten’ or *jentunu* ‘be absentminded’, which have very limited sets of participants – fruit, vegetables, plants and corpses in the

¹ See 3.5 for a treatment of stative verbs with state change extensions, and note that these verbs are glossed in terms of their stative meaning component throughout this thesis.

CHAPTER 3

case of ‘be moldy’ and only people in the case of ‘be absentminded’. Yet, a limitation in the possible set of participants is also attested for the external cause subjects or Theme objects of certain transitive verbs of change of state. Only women cook food (*nin*) or draw water (*baa*); and only certain domestic animals like bulls and he-goats undergo the action of *bana* ‘castrate’, for example. To summarize, selectional restrictions on participants **alone** are a bad predictor for causation type in Jalonke and are therefore not taken to represent the distinction between internally vs. externally caused.

Cross-linguistically, there is a tendency to lexicalize internally caused and uncaused events in intransitive verbs.. Nevertheless, it should be noted that regardless of such common tendencies across languages (e.g. verbs of bodily processes tend to be internally caused, and hence unergative, intransitives) the membership of a verb in the class of intransitive verbs hinges on the language-particular construal of the corresponding event. Whether verbs with similar meanings are conceptualized as internally caused or uncaused can for that reason vary within languages, and even more so across languages. *Shudder*, for instance, is conceived of as internally caused in English according to Smith (1978) and Levin & Rappaport Hovav (1995), but *shake*, although very close in meaning, is not. The distinction internally caused vs. externally caused is also valid for the Jalonke translational equivalents of English *shudder* and *shake*. These are the verbs *sereseren* ‘shudder, tremble’, which can be predicated of animate participants and of the earth, and *jigijan* ‘shake’, which has a much wider range of mainly inanimate participants, of which the participants of *sereseren* ‘shudder, tremble’ form a subset. Other close translational equivalents of English verbs in Jalonke, however, diverge from them in their argument structure. Thus, while English *sharpen* and *smooth* allow externally caused, hence transitive, uses, their Jalonke counterparts *xayyan* ‘be sharp’ and *nexun* ‘be smooth’ are limited to intransitive or uncaused uses. Finally, it has to be remarked that there are a number of cases that have to be judged as idiosyncratic at least at the present stage, and probably cannot be accounted for semantically at all in Jalonke. Consider the verbs *gweeli* ‘be red’, *fɔɔrɔ* ‘be black’, and *fɪxɛ* ‘be white’. All of them are stative verbs with state-change readings. Only *fɔɔrɔ* ‘be black’ and *fɪxɛ* ‘be white’, though, have externally caused transitive uses and are therefore classified as verbs that participate in the causative-inchoative alternation. That *gweeli* ‘be red’, the third basic color term of Jalonke if one applies the criteria of Berlin & Kay (1969), is an exception in terms of its syntactic ranges is not explainable in terms of synchronic semantic differences. All three color terms can denote changeable or stage-level properties as well as inherent or individual-level

LEXICAL ARGUMENT STRUCTURE – INTRANSITIVE VERBS

ones; all have a basic stative event structure that can be extended to a change of state event structure; it is only with respect to causativization patterns that *gweeli* ‘be red’ differs from the other two color terms.

As mentioned in 1.7.2.2, the term ‘internally caused’ as used by Levin & Rappaport Hovav (1995) is slightly misleading, because internally caused event descriptions actually **lack** a separate causal subevent in their lexical semantic representation. Since the intransitive verbs in Jalonke all realize event structures without a causing subevent, the contrast between internally caused and uncaused events is thus not directly visible in the event structure of these verbs in terms of causation type. Rather, causation type is reflected for internally caused verbs in a lexical specification of their single argument as animate or as restricted to a small set of possible participants, and in the meaning of these verbs when combined with the causative marker, which is always indirect causation (cf. 7.3.1.2.1).

Intransitive verbs in Jalonke comprise the event structure types of manner or process verbs, uncaused or simple changes of state or location encoding only the result of the change, not its manner, and stative verbs (with state-change extensions). Manner verbs mainly comprise verbs denoting manner of motion, manner of emission and certain bodily processes. Pure verbs of change or result verbs include verbs of inherently directed motion and a number of other inchoative verbs of change of state. The class of stative verbs consists of verbs denoting properties that are generally lexicalized as adjectives in languages with a separate form class of adjectives. Many of these stative verbs can have additional state change readings in appropriate circumstances. The state-change readings for stative verbs are not taken to be derivationally achieved. Rather, they are argued to be triggered by the verbs denoting stage-level or individual-level properties. This distinction is not lexically anchored but arises from the sentential context and from real-world knowledge. The examination of intransitive subclasses based on event structure starts with an investigation of manner verbs, which in Jalonke are coextensive with the class of internally caused verbs, in the following section.

3.3. INTRANSITIVE MANNER VERBS

3.3.1. MEMBERS OF THE CLASS OF INTRANSITIVE MANNER VERBS

Among the intransitive manner verbs of Jalonke are some verbs that denote manner of motion, exemplified in Table 1.

CHAPTER 3

Table 1: Some intransitive verbs of manner of motion in Jalonke

<i>dagalan</i>	‘stumble, trip’
<i>pintipanta</i>	‘move convulsively, twitch’
<i>salatu</i>	‘skid, slip, slide, glide’
<i>senketen</i>	‘limp’
<i>suurun</i>	‘skid, slip, slide, glide’

Further, the class contains verbs that denote a specific manner of emission in their constant. Many of these verbs designate the emission of sounds or substances, and among the former are many verbs that are specialized to denote sounds made by particular animals. It is not clear to which degree these verbs can be differentiated from some verbs of bodily processes introduced in the next paragraph – neither group allows cognate objects, and most of the bodily processes concerned are accompanied by the emission of sounds and/or substances. Therefore, verbs of bodily processes might ultimately turn out to be classified as verbs of emission, too.

Only two verbs denoting light emission have been found so far, *jilen* ‘gleam, glisten, glitter’ and *jambalin* ‘shine, glow’. Many of the verbs of manner of sound emission are onomatopoeic and occur with specialized intensifiers which are probably ideophones (see 2.5.3 for an overview). Examples of verbs of sound and light emission are given in Table 2.

Table 2: Some intransitive verbs of manner of emission in Jalonke

<i>furufurun</i>	‘rustle (of cloth, of the wings of birds)’
<i>gɔŋgɔn</i>	‘bark’
<i>gwelengwelen</i>	‘speak loudly’
<i>jambalin</i>	‘shine, glow (of moon, stars, spotlights and light bulbs)’
<i>jilen</i>	‘gleam, glitter, glisten (of metals, mirrors, glass)’
<i>mbɛɛmbɛɛ</i>	‘bleat (of sheep, goats)’
<i>putuputu</i>	‘roar (of motorbikes and other motorized machines)’
<i>sɔnxɔ</i>	‘shout, scream’
<i>suisui</i>	‘squeak (of bats, mice, rats)’
<i>tɛɛluteɛlu</i>	‘chatter, prattle, babble (of humans and certain birds)’
<i>waa</i>	‘weep, cry (of humans and animals)’
<i>xɔjɔxɔ</i>	‘rumble (of stomach and throat if somebody is famished)’
<i>xiixɔɔ</i>	‘creak, squeak (of doors)’
<i>xuruxan</i>	‘snore’

LEXICAL ARGUMENT STRUCTURE – INTRANSITIVE VERBS

Another group of intransitive verbs denoting manner activities are verbs of bodily processes. These verbs encode bodily processes of humans and in some cases higher animals:

Table 3: Some intransitive verbs of bodily processes in Jalonke

<i>jele</i>	‘laugh’
<i>kaakun</i>	‘yawn’
<i>mɔɔsi</i>	‘smile’

3.3.2. FURTHER REMARKS ON INTRANSITIVE MANNER VERBS

There are two intransitive manner verbs that have alternating transitive uses. The verbs in question are *waa* ‘weep, cry’ and *wale* ‘work’. The transitive uses of these two verbs are analyzed as the only instances of the applicative alternation in Jalonke, which promotes a subset of the possible adjuncts of the intransitive variant of these verbs to direct object. Because the promotion to object position is only applicable to a very limited number of nouns, and not to all the adjunct participants of the intransitive alternants, the verbs participating in the applicative alternation are classified as base intransitive verbs. The applicative alternation is taken up in detail in 7.4.4.

3.3.3. EVENT STRUCTURE AND LEXICAL ASPECT OF INTRANSITIVE MANNER VERBS

Manner or process verbs are verbs that denote dynamic, atelic events. The verbs further denote internally caused events. Manner verbs can be differentiated from other event structure classes through the following properties:

That manner verbs denote atelic events and hence correspond to Vendlerian activities can be diagnosed by the realization-under-cessation introduced in 1.8.4.3. The results of this test are illustrated in (1)-(3).

- (1) *Adama tukan -ma.*
 Adama jump -IPFV
 ‘Adama is jumping.’

- (2) *A na a luu, a banta tukan?*
 3SG when 3SG stay 3SG PF jump
 ‘When he abandons it, has he already jumped?’

CHAPTER 3

- (3) *Owun, a banta tungan.*
 yes 3SG PF jump
 ‘Yes, he has already jumped.’

The difference in aspectual interpretation is illustrated through the results of the realization-under-cessation test for a telic verb:

- (4) *Xem -εε faa -ma.*
 man -DEF come -IPFV
 ‘The man is coming.’

- (5) *A na faa -ma, n mayi a fala ra:*
 3SG when come -IPFV 1SG can 3SG speak with
 ‘When he is coming, can I say:

a banta faa?
 3SG PF come
 he has (already) come?’

- (6) *Ɔ, a mɛn mun faa.*
 No, 3SG yet NEG come
 ‘No, he hasn’t come (yet).’

Manner verbs and verbs of change – hence all dynamic verbs – receive an aspectual interpretation different from that of stative verbs when zero-marked for aspect. Dynamic verbs, irrespective of event type, carry a past perfective meaning if used without overt aspect marking and require overt imperfective marking in order to acquire an imperfective interpretation. This difference in aspectual interpretation is tested through the default aspect test introduced in 1.8.4.1, as the contrasting examples (7) and (8) for manner verbs and (9) and (10) for verbs of change show:

- (7) *Adama tungan.*
 Adama jump
 ‘Adama jumped.’

LEXICAL ARGUMENT STRUCTURE – INTRANSITIVE VERBS

- (8) *Adama tukan -ma.*
 Adama jump -IPFV
 ‘Adama is jumping.’

- (9) *E faa.*
 3Pl come
 ‘They came.’

- (10) *E faa -ma.*
 3PL come -IPFV
 ‘They are coming.’

For stative verbs, on the other hand, the interpretation of the form unmarked for aspect is that the situation obtains at present:²

- (11) *Nde na gilin -xi? A jaxun!*
 who DEM:DIST fry -PF 3SG be sweet
 ‘Who has fried this? It is tasty!’ (Of a goat we were just eating) Labe 083

In contrast, if the encoding of current relevance in combination with perfectivity is intended, dynamic verbs have to be in the perfect. (12) gives an example containing the manner verb *xii* ‘sleep’; (11) above shows perfect marking for the transitive verb of change *gilin* ‘fry’ in order to signal current relevance or perfect of result.

- (12) *A xii -xi nxo kon nan i.*
 3SG sleep -PF 1Pl.E neck FOC at
 ‘He has slept at our place.’ Labe 208

Following the formalization of Rappaport Hovav & Levin (1998), intransitive manner verbs in Jalonke are taken to realize the following event structure template introduced in 1.7.2 and repeated below:

² This finding corresponds well to an observation made by Welmers (1973) about Niger-Congo languages in general: “[...] a number of languages distinguishes two types of verbs, in general “stative” and “active”. [...] For statives, a reference to present time may use the same construction that refers to past time if an active verb is used [...]” (Welmers 1973: 346). In other languages, as noted by Dowty (1979) for English, stative verbs in the simple present have present time reference, whereas dynamic verbs in the simple present can only receive a habitual or generic interpretation.

CHAPTER 3

(13) [x ACT_{<MANNER>}]

All the verbs instantiating this template are characterized by a manner component modifying the ACT predicate. This manner component specifies the particular manner that distinguishes individual verbs from other verbs of the same semantic domain. Thus, verbs of sound emission are differentiated through the lexically indicated manner that distinguishes, for instance, whistling from beeping. The verb-specific manner encoded in an activity event structure for an individual verb is its constant, i.e. the ‘idiosyncratic information’ (Pinker 1989) in a verb’s meaning, also called ‘semantic content’ (Grimshaw 1993) or ‘particular’ (Goldberg 1995). This constant sets a verb apart from other verbs with the same structural components of meaning, here called templates. The absence of a change of state/location component from manner of motion verbs is reflected in the impossibility for a locative postpositional phrase to be interpreted as a Path adjunct (Jackendoff 1983), that is, as denoting the Goal of a change of location:

- (14) *A tugan -xi nde dagi -nee fari.*
 3SG jump -PF INACT mat -PL on
 ‘He had jumped (up and down) **on** the mats.’
 * ‘He had jumped **onto** the mats.’

If the specification of both manner and Path of motion is associated with a verb of manner of motion, Jalonke behaves like a typical ‘verb-framed’ language (Talmy 1985, 2000)³. The verb in the main clause expresses Path; an adjunct consisting of a postpositional phrase headed by *ra* ‘with’ expresses the manner of motion, as in (15).

- (15) *A gor -ɔɔ tugan na...*
 3SG descend -IPFV jump with
 ‘He is descending jumping...’

Tomatoman-M 011

In parallel, if the specification of both a change of state and its manner is intended, the manner verb appears again in a *ra*-phrase:

³ *Talmy (1985, 2000) was the first to systematize a distinction prominent for example between Germanic and Romance languages. The former allow the conflation of manner of motion and fact of motion in the main predicate, while the particular direction of motion is expressed in ‘satellites’ or adjuncts (‘satellite-framed languages’). The latter lexicalize the fact of motion and the direction of motion in the main predicate, but do not permit the expression of the manner of motion in the main predicate (‘verb-framed languages’).*

LEXICAL ARGUMENT STRUCTURE – INTRANSITIVE VERBS

- (16) *Ning -εε tuu -ma pintipanta ra.*
 cow -DEF die -IPFV move convulsively with
 ‘The cow is dying moving convulsively.’

Unlike in English, intransitive manner templates (*run*) cannot be expanded into state change templates by means of the resultative construction (*She ran her soles thin.*). There is no monoclausal equivalent of the resultative construction in Jalonke – if it is intended to denote an event where a process leads to a result state, the result state is coded in a subordinate clause headed by *haa* ‘until’, as in (17):

- (17) *N banta jele haa n tagan.*
 1SG PF laugh until 1SG be tired
 ‘I have already laughed until I was tired.’ Mburee 017

In contrast to other languages, Jalonke does not permit manner verbs to take (cognate) objects either (*She smiled a charming smile.*) (The marginal exceptions to this observation are introduced in 7.4.3).

3.3.4. PARTICIPANT STRUCTURE OF INTRANSITIVE MANNER VERBS

Only two verbs, *tugan* ‘jump, fly’ or *maguu* ‘swim’, are always controlled in the sense of Klaiman (1991, 1992) if predicated of a human Effector. These two verbs notwithstanding, manner verbs are not positively specified for control, although they can all be predicated of human subjects. The feature of control was tested by eliciting for all verbs whether there was a necessary controlled interpretation present when they were predicated of human subjects. Control was tested through the control test introduced in 1.8.4.7. For the majority of manner verbs, both controlled and uncontrolled interpretations are acceptable, as illustrated for *waa* ‘cry’:

- (18) *N an tewi -xi nde n waa..*
 1SG 1SG do deliberately -PF INACT 1SG cry
 ‘I cried deliberately.’
- (19) *N m’ an tewi -xi nde n waa..*
 1SG NEG 3SG do deliberately -PF INACT 1SG cry
 ‘I didn’t cry deliberately.’

CHAPTER 3

In other words, manner verbs are not necessarily agentive; if an agentive interpretation arises, it follows compositionally from the interaction of lexical verb meaning and participant structure. The verbs of this class thus merely specify an Effector as the argument of the ACT predicate. Nevertheless, many of the individual verbs pose other restrictions on the nature of their single argument – it is a certain species of animal in the case of *ɲɔɔxɔɔ* ‘croak (of frogs)’; it is human in the case of *mɔɔsi* ‘smile’; or it is an inanimate entity that reflects light in the case of *jilen* ‘gleam, glitter’.

3.4. INTRANSITIVE RESULT VERBS

3.4.1. MEMBERS OF THE CLASS OF INTRANSITIVE RESULT VERBS

Among the intransitive verbs of change are verbs of inherently directed motion. These verbs all contain information about the direction of motion⁴ but lack a meaning component specifying its manner. Some of them are deictic, i.e. they lexicalize movement towards the deictic center (*faa* ‘come’ and *talɔ* ‘come (honorific)’) or away from it (*sigɔ* ‘go’).

Verbs of inherently directed motion specify their participant as either the Source or the Goal of movement as part of their lexical meaning. Thus, *keli* ‘get up, leave’, as in (20) encodes a Path away from a Source, and *sigɔ* ‘go’, as in (20), a Path towards a Goal.

- (20) *An sɛŋkɔɲt kat, n keli- xi nde beeji*
 in (Fr.) fifty (Fr.) four (Fr.) 1SG leave -PF INACT here
 ‘In fifty four, I had left here,

n sigɔ Sɛnɛgaali i.
 1SG go Senegal at
 I went to Senegal.’

Alpha 005

Table 4: Some intransitive verbs of inherently directed motion in Jalonke

<i>dangu</i>	‘pass, overtake’
<i>faa</i>	‘come’
<i>giri</i>	‘cross, pass’
<i>goro</i>	‘descend’

⁴ As laid out in 2.7, postpositions in Jalonke are not specialized as to the encoding of Source, Goal or Location. This meaning component is contributed by the predicate.

LEXICAL ARGUMENT STRUCTURE – INTRANSITIVE VERBS

<i>keli</i>	‘get up, leave’
<i>mini</i>	‘exit’
<i>sigā</i>	‘go’
<i>tee</i>	‘ascend’

Table 5: Some other intransitive result verbs in Jalonke

<i>bolo</i>	‘leave, let go, leave in peace’
<i>bula</i>	‘burst, explode’
<i>gaji ma/ra</i>	‘finish’
<i>guruntun</i>	‘start, quiver, wince’
<i>janfa</i>	‘improve, progress’
<i>kamali</i>	‘become complete’
<i>kutin</i>	‘bore into, pierce into’
<i>muti</i>	‘disappear’
<i>sɔntɔ</i>	‘disappear’
<i>tɔn</i>	‘guess’
<i>tantan</i>	‘make a mistake, commit an error’
<i>taxun</i>	‘separate, leave each other’
<i>tuu</i>	‘die’
<i>xuben</i>	‘go out, go dark, die’
<i>xunu</i>	‘wake up’

Some of the intransitive verbs of change take postpositional complements, as for instance *nɛɛmu* ‘forget’:

- (21) *N nɛɛmu -xi dii -na ma.*
 1SG forget -PF child -DEF at
 ‘I have forgotten the child.’

Heeriko 138

Only one of the phasal verbs of Jalonke, *gaji* ‘finish, end’, is a base intransitive verb. *Gaji* takes verbal as well as nominal complements; the former are marked by *ra*, the latter by *ma*:

- (22) *A gaji xij -ɛɛ fii ra dii jor -ɛɛ ma.*
 3SG finish milk -DEF give with child young -DEF at
 ‘She finished (lit.: with) giving milk to the young child.’

CHAPTER 3

- (23) *Nxo na gaji xəri na ma, nxo kans -εε gee.*
 1PL.E when finish now DEM.DIST at 1PL.E peanut -DEF dig out
 ‘When we had finished (lit.: at) that now, we dug out peanuts.’ Alpha 161

3.4.2. EVENT STRUCTURE AND LEXICAL ASPECT OF INTRANSITIVE RESULT VERBS

Unlike intransitive manner verbs and most transitive verbs of change of state (see 4.4), all intransitive verbs of change of state are result verbs and lack a manner component in their event structure. These verbs, like *mini* ‘exit’ or *janfa* ‘improve, progress’, focus on the result of a change of state/location without specifying how this change came about. This absence of a manner component is a symptom of the verbs in this class denoting uncaused – and hence simple – state changes. A manner component in a change of state event structure would entail a complex event in which the manner component would correspond to an external cause element that could bring about a change in a specific manner.

Some of the intransitive verbs of change – the verbs of inherently directed motion such as *goro* ‘descend’ or *tee* ‘ascend’ – only entail change in a particular direction. These state changes have no discrete end state as long as no degree of change is specified. Consequently, their result state can be the source state of the same type of event of change:

- (24) *A banta goro, a gor -ɔɔ sɔnnɔn.*
 3SG PF descend 3SG descend -IPFV still
 ‘He has (already) gone down, he is still going down.’

Other verbs of change have a result state that is logically incompatible with the source state – to these verbs belong *tuu* ‘die’, presupposing the source state of being alive, or *xunu* ‘wake up’, entailing the source state of being asleep. For verbs of change with a discrete result state, it is unacceptable to assert that an entity that has already undergone the state change denoted by the verb is undergoing it again as long as it is in the result state. As suggested in 1.7.2, all verbs of change receive a unified treatment because on the analysis adopted here, only the presence or absence of a change of state/location component is relevant at the lexical level. Likewise, no distinction between punctual and durative changes is assumed to be part of all the verbs’ event structures. As laid out in 1.7.2, the features of punctuality and durativity are taken to be dependent on the interaction of verb semantics and sentential context. Jalonke is no exception to this observation. Consider the

LEXICAL ARGUMENT STRUCTURE – INTRANSITIVE VERBS

verb *tuu* ‘die’. The verb can receive a punctual interpretation, under which it is incompatible with the imperfective, because in many instances dying is seen as an instantaneous change of state. If somebody is predictably in the course of dying, e.g., somebody very ill or a goat whose throat was cut to leave it to bleed out, as in example (25), the event is construed as durative, and consequently the imperfective is admitted, as shown by the result for the durativity-punctuality test introduced in 1.8.4.6:

- (25) *Sii -na tuu -ma.*
 Goat -DEF die -IPFV
 ‘The goat is dying.’

Only very few verbs, such as *bula* ‘explode, burst’, are incompatible with a durative interpretation if the subject is in the singular (and are consequently not compatible with the imperfective in singular contexts).

If verbs of change of state/location occur in the imperfective, two options can be distinguished. For the verbs that lexically encode a discrete result state, the event denoted by the verb is not interpreted as realized. For the verbs that do not encode a discrete result state, such as verbs of inherently directed motion and gradual changes such as *melun* ‘be sharp’, the interpretation of the event as realized or not depends on properties of the clause. The realization-under cessation test for the different groups of verbs illustrates these properties. For verbs of discrete change of state like *faa* ‘come’, it is impossible to view the events they denote as realized when interrupted before completion. Thus, the only possible answer to the question ‘When somebody is coming, has he come?’ is ‘no’ (as shown in (4)-(6) above). For verbs of inherently directed motion and verbs of gradual change, the interpretation of the imperfective is different. If no measured Path is present, verbs of inherently directed motion receive an atelic interpretation, as exemplified by the answer to the realization-under-cessation test for (26) in (27).

- (26) *Mariama tee -ma.*
 Mariama ascend -IPFV
 ‘Mariama is going up.’

- (27) *A banta tee.*
 3SG PF ascend
 ‘She has (already) gone up.’

CHAPTER 3

If verbs of inherently directed motion measure out the Path through the presence of a Goal phrase, as in (28), they have to be interpreted as telic. The event is then not realized until the Goal is reached, as shown by the degree-of-change test (introduced in 1.8.4.5) which consists of the answer to the realization-under-cessation test for atelic verbs of change of state (27) when they are specified for a degree of change, as in (29):

(28) *Mariama tee -ma kɔl -la fari.*

Mariama ascend -IPFV hill -DEF on

‘Mariama is going up the mountain.’

(29) *A mɛn mun tee kɔl -la fari.*

3SG yet NEG ascend hill -DEF on

‘She did not yet go up the mountain.’

Nevertheless, verbs of inherently directed motion (and of gradual change, see 3.5, where the change extensions of stative verbs are discussed) differ from manner verbs even if no degree of change is specified. Since manner verbs have no change component, locative adjuncts with them can never be understood as denoting Paths, as shown in (14) above. Since result verbs thus form one large class that shares important features, they are all taken to instantiate Rappaport Hovav & Levin’s (1998) template for verbs of change with a simple event structure, repeated in (30).

(30) [BECOME [x <STATE>]]

3.4.3. PARTICIPANT STRUCTURE OF INTRANSITIVE RESULT VERBS

Intransitive result verbs have a Theme as the argument of the BECOME predicate. This Theme can be interpreted as agentive if it is human and acts volitionally and controlled, or if control of the action is implied, as is often the case for human arguments. That is, a Theme at the event structure level may correspond to an Agent at the participant structure level. Agency is, however, not part of most of the verbs’ lexical meaning, as illustrated by the following examples for *goro* ‘descend’. Although the verb occurs with a human single argument, the action can be depicted as occurring without control in (31):

LEXICAL ARGUMENT STRUCTURE – INTRANSITIVE VERBS

- (31) *N m' an tewi -xi nde*
 1SG NEG 3SG do deliberately -PF INACT
 'I didn't deliberately

n xa goro boxi -n' ii.
 1SG SUBJ descend ground -DEF at
 descend to the ground.

N bira -xi nde.
 1SG fall -PF INACT
 I had fallen.'

3.5. INTRANSITIVE STATIVE VERBS

3.5.1. MEMBERS OF THE CLASS OF INTRANSITIVE STATIVE VERBS

In anticipation of the discussion of the event structure properties of stative verbs, a selective list of members of the class given below already draws on the distinction between stage-level vs. individual-level properties, properly introduced in 3.5.3 below. The distinction is useful in explaining grammatical differences (such as the choice of *ser* vs. *estar* in Spanish, for example) motivated by the contrast between inherent or individual-level and passing or stage-level properties of referents. A deeper investigation of preferences of interpretation for individual verbs remains a subject of further research. Nevertheless, the tendencies for some verbs as observed so far in denoting stage-level vs. individual-level properties are given in Table 6 and Table 7.

Table 6: Some stative verbs in Jalonke that often denote stage-level properties

<i>bɔrɔ</i>	'be moldy, rotten'
<i>bembɛn</i>	'be fat'
<i>bundaa</i>	'be wet'
<i>dolin</i>	'be bent, clumsy, wrong'
<i>fata</i>	'be diligent, slow'
<i>lan</i>	'be good, nice, good-looking'
<i>tagan</i>	'be tired'
<i>tinxin</i>	'be straight, honest'

Table 7: Some stative verbs in Jalonke that often denote individual-level properties

<i>fan</i>	‘be pleasant, nice’
<i>goo</i>	‘be plenty, abundant’
<i>gundu</i>	‘be round’
<i>jaaixara</i>	‘be coldblooded’
<i>jafun</i>	‘be crazy, mad’
<i>kɔɔtaa</i>	‘be clever, bright’
<i>man</i>	‘be able, capable’
<i>sonti</i>	‘be left over (of goods, unmarried women)’

3.5.2. EVENT STRUCTURE AND LEXICAL ASPECT OF INTRANSITIVE STATIVE VERBS

The class of intransitive stative verbs conflates two senses generally taken care of by different word classes in languages that have the category adjective: they oscillate between a change of state and a stative reading. Verbs integrating these two notions in one verb root have been attested for other Niger-Congo languages (Welmers 1973 for Niger-Congo languages in general, Essegbey 1999 for Ewe, *inter alia*). Welmers calls these verbs ‘inchoative verbs’. Just like Welmers and Essegbey, I argue for Jalonke in favor of a monosemous account of these verbs, whose different readings are illustrated in (32) and (33).

- (32) *Tumb -εε melun -ma a xere nan na.*
 thorn -DEF be pointed -IPFV 3SG youth FOC with
 ‘It’s in its young age that a thorn becomes pointed.’ Proverbs 5

- (33) *Kreɔn -na melun.*
 pencil -DEF be pointed
 ‘The pencil is pointed.’

In (32), it is shown that the verbs of this class are not exclusively stative – most of them are compatible with the imperfective marker. The example further illustrates that the gradual entering into a state is signaled by the imperfective - the thorn in (23) is not being pointed, it is becoming pointed. From (33) it becomes clear that these verbs, if unmarked for aspect, simply denote the state resulting from the verb’s action. It might be argued that (33) means ‘The pencil has become pointed’ rather than ‘The pencil is pointed’. But if a speaker wants to refer to the result state of a state change explicitly, (s)he does so by using the verb with a PP containing

LEXICAL ARGUMENT STRUCTURE – INTRANSITIVE VERBS

the expletive pronoun *a* and the general locative postposition *i*, as in (34) (where the expletive 3SG pronoun *a* is fronted to ε because of the front vowel of the following vocalic postposition).

- (34) *Krɛɔn -na melun ε i. (A nun mun melun,*
 pencil -DEF be pointed 3SG at 3SG PAST NEG be pointed
 ‘The pencil has become pointed. (It hadn’t been pointed,
kənɔ xɔri, a banta melun.)
 but now 3SG PF be pointed
 but now it is pointed.)’

For the few verbs that only have stative readings and for all other verbs, this PP is either incompatible (35) or conveys the locative meaning ‘there’. The locative meaning is illustrated by the possible substitution of the expletive pronoun in (36) by a lexical NP in (37) for a purely stative verb and in (38) and (39) for a dynamic verb :

- (35) *Maimuna fan *a i.*
 Maimuna be nice 3SG at
 ‘Maimuna is nice.’
- (36) *Tɔx -εε kaaba a i.*
 chicken -DEF be dumbfounded 3SG at
 ‘The chicken is frightened there.’
- (37) *Tɔx -εε kaaba dunxi -n’ ii.*
 chicken -DEF be dumbfounded plantation -DEF at
 ‘The chicken is frightened in the plantation.’
- (38) *N binir -εε dɔxɔ ɔ i.*
 1SG bottle -DEF sit (down) 3SG at
 ‘I put (lit.: ‘sat’) the bottle there.’
- (39) *N binir -εε dɔxɔ bɔxi -n’ ii.*
 1SG bottle -DEF sit (down) ground -DEF at
 ‘I put (lit.: ‘sat’) the bottle on the ground.’

CHAPTER 3

From these findings, I conclude that stative verbs are interpreted as having an inchoative event structure when combined with the imperfective.

Some of these verbs, however, do not seem to be compatible with the imperfective. Consider (40):

- (40) *Kule -subεε bεxi.*
 monkey -meat be bitter
 ‘Monkey meat is not tasty.’

In this context, a state change reading is ruled out, as illustrated by the ungrammaticality of (41), at least if it is to be understood generically.

- (41) **Kule -subεε bεx -εε.*
 monkey -meat be bitter -IPFV
 *‘Monkey meat is becoming not tasty.’

This unacceptability of imperfective marking is, however, not a property of *bεxi* ‘be bitter’; rather, it depends on properties of the referent of the subject NP. Thus, if (41) were predicated of monkey meat in the process of being cooked, the imperfective would be perfectly acceptable. Likewise, if somebody put too much salt into a dish, it is possible to utter (42) after having tasted the dish in the middle of the cooking process, or to taste the dish after it is completed and to state (43).

- (42) *Fata! Ji sab -εε bεx -εε!*
 be diligent DEM:PROX sauce -DEF be bitter -IPFV
 ‘Be careful! This sauce is becoming bitter!’

- (43) *Sab -εε bεx’ εε i (A nun mun bεxi,*
 sauce -DEF be bitter 3SG at 3SG PAST NEG be bitter
 ‘The sauce has become bitter! (It wasn’t bitter,

kənɔ xɔri, a bεxi).
 but now 3SG be bitter
 but now it is bitter!’

LEXICAL ARGUMENT STRUCTURE – INTRANSITIVE VERBS

From this finding, I conclude that the activation of an inchoative event structure through imperfective marking is only possible for stage-level interpretations, that is, interpretations of the state denoted by the verb as a transitory one.

Many of the stative verbs can have imperfective reference not only if not overtly marked for aspect, but also when marked for perfect, just like dynamic verbs. The problem of the admissibility of both zero marked and perfect marked readings for stative verbs is illustrated for the verb *gundu* ‘be round’ in (44) and (45), which can refer to the same situation.

- (44) *Balon* *-na* *gundu*.
 ball -DEF be round
 ‘The ball is round.’

- (45) *Balon* *-na* *gundu* *-xi*.
 ball -DEF be round -PFV
 ‘The ball is round.’

It seems that the compatibility with the perfect marker for stative verbs is not a lexical property, but hinges on different possibilities of construal for certain situations. Some additional examples serve to zoom in further on the contrast responsible for the availability of a state change reading and of perfect marking for stative verbs. For this purpose, let's look at the stative verb *xaqɲɛ* ‘be ferocious’ and see how real-world knowledge, that is, known characteristics of the subject referent, influence the compatibility with imperfective and a *i*-construction.

Alpha Abdoulaye, a village dignitary, is famous for being ill tempered. Accordingly, it is impossible to claim that he has become ferocious as in (46) – he is renowned for his hot temper. In contrast, Haamidu, a so far peaceful child, can well be said to have changed his character if he starts to have sudden outbursts as in (47).

- (46) *Alfa* *Abdulai* *xaqɲɛ*. (**A* *xaqɲɛ* *ɛ* *i*.)
 Alpha Abdoulaye be ferocious 3SG be ferocious 3SG at
 ‘Alpha Abdoulaye is ferocious. (*He has become ferocious.)’

CHAPTER 3

- (47) *Haamidu xaqne ε i. (A nun mun xaqne.)*
 Haamidu be ferocious 3SG at 3SG PAST NEG be ferocious
 ‘Haamidu has become ferocious. (He wasn’t ferocious.)’

In analogy, it is highly uncommon (but see one exception in (52) below) to have a stative verb marked for perfect appear in generic sentences or when referring to characteristic properties of the referent. For these contexts, the preferred form is zero-marked for aspect, as in (48) and (49).

- (48) *Foroto -nee fat -εε gweeli.*
 white person -DEF.PL body -DEF be red
 ‘The body of white persons is red.’

- (49) *Taanu jafun.*
 Taanu be mad, crazy
 ‘Taanu is mad.’

In contrast to the examples above, which refer to time-stable situations, stative verbs are more often marked for perfect when referring to the still holding post state of a change of state, as is the case of the following two sentences:

- (50) *Nan a niga -xi*
 FOC 3SG do -PF
 ‘This one has done it (throwing burning coal at the chimpanzee’s buttocks)’

haa a dul -la gweeli -xi sɔwɛsɔwɛsɔwɛ!
 until 3SG buttock -DEF be red -PF IDEO
 until it’s buttocks has become completely red.’ Duli 027
 (From a folk story explaining how it came
 that chimpanzees got red buttocks).
- (51) *Harai, i jafun -xi too de!*
 EXCL 2SG be crazy, mad -PF today INT
 ‘My god, you are being crazy today!’

However, in one case perfect marking on a stative verb is attested although it is expressively denied that the Theme underwent a state change:

LEXICAL ARGUMENT STRUCTURE – INTRANSITIVE VERBS

- (52) *A kɔɔtaa -xi. (*A nun mun kɔɔtaa.)*
 3SG be clever -PFV 3SG PAST NEG be clever
 ‘He is bright. (*He wasn’t bright.)’

Nevertheless, *kɔɔtaa* ‘be clever, bright’ is compatible with state-change interpretations, as illustrated by the following sentence, where the narrator describes how young people get cleverer through experience:

- (53) *E kɔɔtaa -ma na kii nan i.*
 3SG be clever -IPFV that way FOC at
 ‘It’s in that way that they are getting cleverer.’ Ataya 1092

In view of this evidence – leaving the problematic, but so far isolated case of *kɔɔtaa* ‘be clever, bright’ in (52) aside for the moment – I deduce that a combination of stative verbs with the perfect is only possible under a stage-level interpretation.

3.5.3. THE STAGE-LEVEL VS. INDIVIDUAL-LEVEL DISTINCTION

The dichotomy of stage-level vs. individual-level predicates, originally put forward by Carlson (1977, 1980), refers to the distinction between transitory properties of referents – like a person acting crazy today in (51) above – and typical or inherent properties of referents – like white people having red skin in (48) above. Stage-level and individual-level properties are generally not encoded lexically in the predicate but are a function of the whole expression and depend on properties of the referent and real-world knowledge (see Carlson 1977, 1980, Carlson (ed.) 1995). That the distinction comes about compositionally and through inference also holds for Jalonke. For one and the same lexeme, *bɛxi* ‘be bitter’, the state-change reading is ruled out if it is predicated of monkey meat in the generic sentence in (40). It is an inherent property of monkey meat, at least in the opinion of Jalonke speakers, not to be tasty, but only a transitory property of a leaf-sauce losing its taste as the result of somebody spoiling it, as in (42). Although it is in most cases possible to imagine a specific context where a normally individual-level property is considered as temporary, there are stative verbs that are more likely to be conceived of encoding characteristic and unchangeable stages than others. Thus, *jaxun* ‘be sweet’ is not attested with aspect marking in texts and is refused in most contexts entailing a state-change reading or a passing property by consultants – honey, bananas and candies are taken to be inherently sweet. Only one context for a stage-level interpretation was found for *jaxun* ‘be sweet’, that of tea becoming

CHAPTER 3

sweet as the result of putting sugar into it. *Jlaxan* ‘be happy, pleased’, however, almost exclusively occurs in the perfect, because it is almost always the result of a state-change – in Jalonke, one is happy because of a compliment, a gift, or good news, but not permanently and as part of one’s personality.

I assume that the perfect, like the imperfective, activates the inchoative event structure and expresses the result state of a change event. Inchoative event structures can only be derived from stage-level states, because only stage-level states, not individual-level states, are time-bound. Stative clauses in which imperfective or perfect are judged anomalous are apparently clauses that do not admit stage-level interpretation. There are a few cases where stative verbs occur in the perfect even though result-of-change readings are denied in the context (cf. (52) above). It may be that in such contexts, the perfect is simply used as a marker of stage-level predication.

If the property of the stative verb is taken to be an individual-level property of the referent, the state-change reading is not available, hence imperfective marking, perfect marking (in most cases) and the *a i*-construction are unacceptable. In contrast, if the property denoted by the verb is taken to be a stage-level predicate, the entering into the state is conceivable, hence imperfective marker, perfect marker and expletive PP are admitted.⁵

As a consequence of the observations made in the previous paragraphs, I analyze the stative verbs of Jalonke as conforming with the event structure template for states suggested by Rappaport Hovav & Levin (1998), shown again here:

(54) [X <STATE>]

An augmentation of the state template by means of a BECOME predicate can create a simple state change template:

⁵ An analysis in terms of stage-level vs. individual-level predicates for Jalonke receives corroboration through an observation from the closest relative Soso. Friedländer (1974) translates the Soso zero-marked as well as the *-khi* form of states (corresponding to the Jalonke *-xi* perfect) with present tense in German. In one case, that of *fura* ‘be sick’, she contrasts a zero-marked and a perfective form, stating that the zero-marked verb conveys generic meaning while the form suffixed with *-khi* expresses a present, transitory state. This suggests that the distinction in marking reflects individual-level vs. stage-level properties in Soso, too.

LEXICAL ARGUMENT STRUCTURE – INTRANSITIVE VERBS

(55) [BECOME [X <STATE>]]

In Jalonke, I assume, the relation between a state and the corresponding simple state change bearing the same verb name is not created derivationally, through a new, related but more complex verb sense as mirrored in the template in (55). Rather, the admissibility of a state-change reading relies on properties of the referent and real-world knowledge and construal of a situation as characteristic and unchanging vs. as transient and changeable. Therefore, I postulate a unified general meaning for the verbs in question in Jalonke. Since the constant component of meaning is stative, I do not follow the Niger-Congo tradition of labeling the verbs in question ‘inchoative’ verbs as done by Welmers (1973) but derive the name for the class from the component that is minimally entailed by these verbs, the stative component. Consequently, throughout this thesis, stative verbs are glossed only with their stative translational equivalents.

In analogy to the verbs of inherently directed motion introduced in 3.4, some stative verbs have state change readings that are gradual. These verbs receive a telic interpretation when the degree of change is specified, as illustrated by (56), where the intensifier *sɔwɛsɔwɛ* ‘completely (of red)’ indicates that a discrete change of state to completely red was achieved. Accordingly, it is impossible to assert the realization of this state-change before completion, as in (57):

- (56) *Kaidi -na gweeli -xi sɔwɛsɔwɛ.*
 paper -DEF be red -PF IDEO
 ‘The paper is (has become) completely red.’

- (57) *Beenun a xa gweeli sɔwɛsɔwɛ, a banta gweeli,*
 before 3SG SUBJ be red IDEO 3SG PF be red
 ‘Before it becomes completely red, it already has become red,

kɔnɔ, a mɛn mun gweeli sɔwɛsɔwɛ.
 but 3SG yet NEG be red completely
 but it hasn’t yet become completely red.’

3.5.4. PARTICIPANT STRUCTURE OF INTRANSITIVE STATIVE VERBS

Since stative verbs lack dynamism, they are said to be odd in imperatives (Smith 1991, Van Valin & LaPolla 1997). At the same time, states cannot be controlled or

CHAPTER 3

maintained volitionally even if predicated of human entities – it is only the change into a state that can optionally be viewed as a controlled or volitional event (Smith 1991). In light of Jalonke stative verbs admitting state-change meanings when they denote stage-level, hence changeable, properties, the incompatibility with the imperative and the absence of volition and control cannot be a lexical property of stative verbs. Rather, it is to be expected that stative verbs are compatible with the imperative and volitional and controlled interpretations when they denote stage-level properties, but not when they denote individual-level properties. Furthermore, it is expected that verbs that admit both options can be distinguished through these features. Although a thorough account of the stage-level and individual-level distinction is beyond the scope of the present study, there are tendencies that seem to confirm this prediction. It is, for instance, possible to utter the command *Fata!* ‘Be careful!’ as in (42), presumably because *fata* ‘be diligent, slow’ is understood as encoding a stage-level property. At the same time, it is only possible to state (58), but not (59):

- (58) *N an tewi -xi nde n fata.*
 1SG 1SG do deliberately -PF INACT 1SG be diligent
 ‘I was deliberately careful.’
- (59) **N m’ an tewi -xi nde n fata.*
 1SG NEG 1SG do deliberately -PF INACT 1SG be diligent
 *‘I wasn’t deliberately careful.’

Apparently, an uncontrolled reading for *fata* ‘be careful’ is anomalous because carefulness entails control that at best can be highlighted, as in (58).

For *fan* ‘be nice’, although also predicable of human beings, and although compatible with a volitional and deliberate interpretation, both the imperative (60) and an interpretation positively (61) or negatively (62) specified for volition and control are highly odd. In all probability, this is the case, because *fan* ‘be nice’ is understood as encoding an individual-level property and it would require very special circumstances to construe its meaning as a stage-level property that would permit a dynamic reading.

- (60) **Fan!*
 be nice
 * ‘Be nice!’

LEXICAL ARGUMENT STRUCTURE – INTRANSITIVE VERBS

- (61) **N an tewi -xi nde n fan.*
 1SG 3SG do deliberately -PF INACT 1SG be nice
 *‘I was deliberately nice.’

- (62) **N m' an tewi -xi nde n fan.*
 1SG NEG 1SG do deliberately -PF INACT 1SG be nice
 *‘I wasn’t deliberately nice.’

As a consequence of the event structure template(s) they instantiate, stative verbs and their state-change extensions are analyzed as having a Theme participant. More agentive interpretations of this Theme at the level of participant structure presuppose that stage-level properties are predicated of human or animate entities and that these properties allow for controlled interpretations.

3.6. SUMMARY

In this chapter, it has been shown that intransitive verbs in Jalonke fall under two causation types: the verbs denote internally caused and uncaused events (3.2). It has been stressed that it is not a universal property of verbs to encode internally caused or uncaused events, but a question of the language-particular construal of these events. Consequently, differences within and across languages with respect to causation type are to be expected. These differences notwithstanding, it can be stated that the semantic domains covered by internally caused verbs in Jalonke confirm to a large degree well-known cross-linguistic tendencies. Thus, internally caused verbs in Jalonke comprise manner verbs, be they verbs of sound and substance emission, bodily processes, or verbs of manner of motion. These verbs are cross-linguistically attested as one of the core classes of unergative verbs, and as will be shown in chapter 8, there are good reasons to regard them as unergative in Jalonke, too. In contrast to Levin & Rappaport Hovav (1995) it has not been assumed that internally caused verbs also comprise verbs of change of state. The intransitive verbs of change of state, all of them result verbs, have been analyzed as denoting uncaused events. Intransitive state changes, although less numerous than externally caused, hence transitive state changes, are cross-linguistically attested, although the size of this group may differ depending on language-individual lexicalization patterns. The causation type of stative verbs with state-change readings, finally, is impossible to assess in Jalonke. This is due to the fact these verbs occur with state-change readings under appropriate circumstances. The meaning of these verbs in combination with the causative marker can only refer to their state-change readings and thus cannot serve as a diagnostic for the causation type of their stative

CHAPTER 3

readings. The verbs in question are therefore preliminarily assumed to denote uncaused events.

Since the causation types are not directly correlated with temporal properties of the event structure for all classes of intransitive verbs, the three temporal event structure types for intransitive verbs have been inspected: manner or process verbs (3.3), verbs of change (3.4), and stative verbs (3.5).

Stative verbs have been demonstrated to allow state change extensions typical for Niger-Congo languages. The availability of these state-change extensions has been attributed to the fact that the verbs appear in contexts where they encode stage-level properties. Accordingly, state-change extensions for stative verbs have been shown to be excluded in contexts where the verbs encode individual-level properties (3.5.3).

This chapter has applied to Jalonke, and partly modified, two distinctions developed for English and not well researched for Non-Indo-European languages. Both distinctions, the one between internally caused and uncaused events, and the one between stage-level and individual-level properties have been shown to be relevant for establishing Jalonke verb classes and for explaining the properties of verbs in these classes. Therefore, the chapter adds important new material from a Non-Indo-European language to the limited data available for the study of the manifestation of causation types and stage-level vs. individual-level distinctions across languages.

The next two chapters address the classes of externally caused verbs that have an exclusive transitive argument structure (chapter 4) and those that can participate in the causative/inchoative alternation (chapter 5). These two chapters will conclude the examination of argument structure classes that are defined through causation type, temporal properties of the event structure, and likelihood of the event to be construed as uncaused.

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

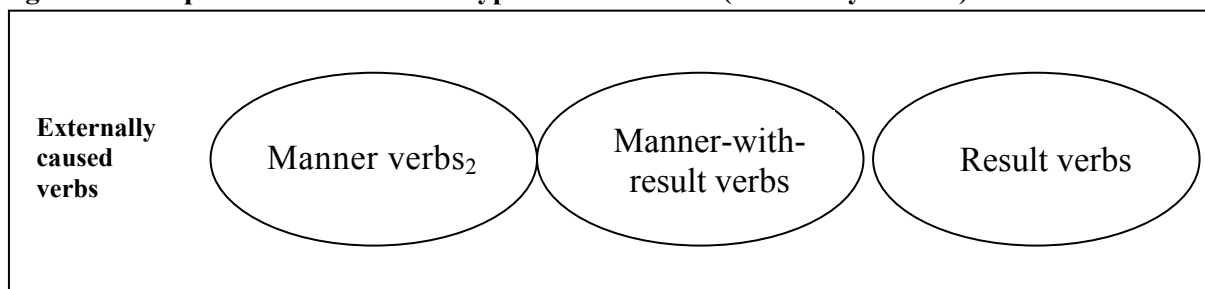
CHAPTER 4

4.1. INTRODUCTION

The present chapter treats the transitive verbs of Jalonke. Transitive verbs comprise 223 entries in the lexicon so far. Section 4.2 introduces base transitive verbs as denoting externally caused events. Of particular relevance for the class of transitive verbs are:

(i) Their temporal event structure properties. One class of transitive verbs does not encode state change, but only expresses manner of motion or contact. These verbs are discussed in 4.3. The remaining two classes of Jalonke transitive verbs encode change of state or location. These two classes can be distinguished by containing a causing subevent that specifies manner or instrument of the change or by containing a causing subevent that leaves manner and instrument of the change in the dark. The former, labeled ‘manner-with-result verbs’, are introduced in 4.4, the latter, termed ‘result verbs’, in 4.5. The existence of a class of transitive result verbs violates cross-linguistic expectations in that these verbs do not participate in the causative/inchoative alternation. The temporal properties, participant structures, and members of the three classes are discussed in the respective subsections. Figure 1 summarizes the three subclasses attested within transitive verbs in Jalonke.

Figure 1: Temporal event structure types for transitive (externally caused) verbs



CHAPTER 4

Causation type is not taken to be relevant for differentiating among transitive verbs, since it is presumed that by lexically specifying two participants, the first of which is external to the caused event, they all instantiate the causation type of externally caused verbs. This causation type for transitive verbs is corroborated in their behavior with the causative marker (cf. 7.3.1.3) and in the obligatory passive interpretation of these verbs in intransitive clauses (cf. 7.3.2), always entailing an Effector external to the eventuality brought about. Therefore, for transitive verbs it is considered relevant to identify their event structure types and to explain the occurrence of two of the event structure types attested for transitive verbs – manner verbs and result verbs – in other argument structure classes. Again, such an explanation will be attempted by looking at the combined criteria of temporal event structure properties and causation type for all argument structure classes in order to determine which criterion or combination of criteria governs membership in an argument structure class.

(ii) Variations in the linking of the second and third participant for those transitive verbs that have an optional third participant. A separate section, 4.6, is dedicated to transitive verbs with an optional third participant, corresponding to so-called ‘three-place predicates’. According to their formal properties, these verbs have only two arguments – their third participant is realized as an adjunct. They all encode change of state or location (possession) and specify the manner in which that change takes place, and thus also could have been treated together with manner-with-result verbs in 4.4. The chapter ends with concluding remarks in 4.7.

4.2. TRANSITIVE VERBS AS DENOTING EXTERNALLY CAUSED EVENTUALITIES

Transitive verbs in Jalonke share the following properties: they appear underived as the heads of transitive clauses. If they combine with the causative marker (see 7.3.1.3), a new Effector is added to the clause, and the result is an expanded transitive verb. Base transitive verbs receive an obligatory passive interpretation when they appear in intransitive clauses; then, the Theme is mapped to subject, and the Effector is not syntactically expressed but semantically always entailed (see 7.3.2 for an account of the passive in Jalonke). This obligatory passive interpretation for intransitive clauses holds for the whole class, with the exception of five verbs, which can suppress their (always inanimate) Theme object and have active intransitive uses in which their (always animate) Effector is mapped to subject. These verbs are described in detail in 4.4.2 and 7.4.3. Although the passive is not mor-

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

phonologically marked in Jalonke, the active use of transitive verbs is clearly the basic one in terms of frequency (as also demonstrated in chapter 9).

Transitive verbs use different mechanisms for nominalization than intransitive verbs: they form subject nouns through object incorporation or V-*tii* compounds, not through zero-derivation or V-*muxi* compounding, as intransitive verbs do. Rather, transitive verbs form object nouns through V-*muxi* compounding (see 2.8.3.4).

Transitive verbs moreover can be characterized as externally caused. This means that the verbs all have an external cause argument that is responsible for bringing about the eventuality denoted by the verb. Consequently, the Theme participants of these verbs “are not participants in the change effected: activity or motive force can be attributed only to the agent, the subject of the transitive verb” (Smith 1978: 102). Base transitive verbs differ with respect to the event structure templates they instantiate. A minority of transitive verbs encode processes or manners. This class contains exclusively verbs of manner of motion (such as *bindixilin* ‘roll’, *firifiri* ‘turn around, spin, rotate’) and manner of contact (*deten* ‘lean on, press on’ or *balon* ‘kick’). Unlike in English (*I rolled the ball* vs. *The ball rolled*), transitive verbs of manner of motion in Jalonke have no intransitive counterparts – non-externally caused manner of motion or contact with these verbs is expressed reflexively (cf. (15) below).

The majority of transitive verbs encode a change of state together with the manner in which it is brought about. These verbs comprise, for instance, verbs of creation and transformation such as *sebe* ‘write’, verbs of cognition, emotion, and perception, such as *too* ‘see’, verbs of cooking – *gilin* ‘fry’ – and many other semantic domains. Some of these verbs can optionally have three participants, the third one encoded as an adjunct. Under these verbs fall, for instance, *fii* ‘give’, *maxorin* ‘ask’ and *matii* ‘sell’. These verbs are addressed in section 4.6 on transitive verbs with an optional third participant.

Very few transitive verbs, all of them verbs of cognition, emotion, and perception, might be taken to be statives, but some of the verbs in question also allow a state change reading, making their classification delicate. These verbs include, e.g., *kolon* ‘know’ and *maqin* ‘scare’. These verbs are not classified separately but treated together with manner-with-result verbs.

CHAPTER 4

Finally, transitive verbs include a smaller number of verbs that encode pure state changes without specifying the manner in which this change of state came about. Among these result verbs are *faxa* ‘kill’, a couple of verbs denoting inherently directed motion, such as *magoro* ‘lower’ and *itee* ‘lift, raise’ and a number of verbs of breaking, such as *mupuxun* ‘crush, smash’ and *wuru* ‘break, crack’.

4.3. TRANSITIVE MANNER VERBS

4.3.1. MEMBERS OF THE CLASS OF TRANSITIVE MANNER VERBS

Transitive verbs of manner of motion in Jalonke are not very numerous. Their inventory is given in Table 1.

Table 1: All transitive verbs of manner of motion in Jalonke

<i>bendun</i>	‘pull’
<i>bindixilin</i>	‘roll’
<i>buubu</i>	‘drag’
<i>fintan</i>	‘fan’
<i>firifiri</i>	‘turn around, rotate, spin’
<i>jigijan</i>	‘shake’
<i>lintan</i>	‘swing’
<i>woli</i>	‘throw’

The subclass further contains verbs of manner of contact. A number of these verbs is listed in Table 2. A complete list is given in Appendix 4.

Table 2: Some transitive verbs of manner of contact in Jalonke

<i>bɔmbɔ</i>	‘hit, strike, beat’
<i>balon</i>	‘kick’
<i>dɛxun</i>	‘strangle, choke’
<i>din</i>	‘pound, punch’
<i>dontin</i>	‘pinch, nip’
<i>garin</i>	‘hit, strike’
<i>kili</i>	‘tickle’
<i>ma-fitan</i>	‘sweep’ (DISTR-only)
<i>sumbu</i>	‘kiss’
<i>turuxun</i>	‘rub’
<i>xɔrɛidin</i>	‘push’

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

Two of the verbs in this group, *gɔnɔ* ‘hit’ and *bun* ‘sting, shoot’ can also be used as verbs of ballistic motion. Most plausibly, this extension is possible because the contact made through direct hitting with an object like a stone resembles the contact made by throwing that object, and the contact made by an insect sting resembles that made by a bullet.

Some of the verb lexicalize not only the manner of contact, but also the instrument or body part used to make that contact: Thus, *balon* ‘kick’ and *bɔrɔn* ‘make twisting and stomping movements’ entail that feet are involved. *Bɔrɔn* also occurs in a fixed collocation with *far-ɛɛ* ‘body-DEF’ to mean ‘dance’. *Bɔmbɔ* ‘hit, strike, beat’, *bula* ‘slap’ and *dexun* ‘strangle, choke’, *dontin* ‘pinch, nip’, *kili* ‘tickle’ and *xɔrɔ* ‘scratch’ are actions typically carried out with the hand or claw in case of an animal. *Furugu* ‘twirl’ entails a twirl-like instrument. The two ‘flog’ verbs *itala* and *xusin* imply whips, branches, belts or other suitable instruments. *Bun* ‘sting’, fire, shoot’ can only be predicated of insects as subjects or implying guns as instruments. *Sumbu* ‘kiss’ involves either the mouth or the nose as the entity brought in contact with another entity; *xin* ‘bite, crunch’ involves the teeth.

Less limited with respect to the instruments they subcategorize for are *din* ‘pound, punch, hit’, *garin* and *gɔnɔ* ‘hit’, *mafitan* ‘sweep’ and *turuxun* ‘rub’. The actions designated by these verbs can be carried out with body parts or specific instruments. In contrast to the verbs having the instrument as part of their lexical semantics, these verbs can occur with instrumental PPs:

- (1) *A a din -xi nde gɛmɛ -na ‘a tun, a bira.*
3SG 3SG hit -PFV INACT stone -DEF with DISC 3SG fall
‘When he had hit it with a stone, that was it, it fell.’ Pear-MAB 012

4.3.2. EVENT STRUCTURE AND LEXICAL ASPECT OF TRANSITIVE MANNER VERBS

In contrast to the intransitive verbs of manner of motion introduced in 4.3, the verbs in this class denote the specific manner of motion and contact in externally caused eventualities. They typically comprise event descriptions in which an animate Effector acts directly on a second participant bearing the Theme role in order to induce non-directed motion (2).

CHAPTER 4

- (2) *N barig -ɔɔ bindixilin.*
 1SG cask -DEF roll
 ‘I rolled the cask.’

In addition, these verbs denote events in which an animate Effector moves in order to get into contact with the second participant, but without entailing a change of state in this participant (3):

- (3) *N Haamidu balon.*
 1SG Haamidu kick
 ‘I kicked Haamidu.’

If self-induced manner of motion or contact is to be expressed, it is encoded by coreferentiality of subject and object. These direct reflexive situations are attested for both animate (4) and inanimate participants (5):

- (4) *Nxo men xa nxo firifiri...*
 1PL.E yet SUBJ 1PL.E spin
 ‘We had to spin (lit.: us) around again...’ (Talking about the custom of pilgrims to Mecca to walk around the Kaaba spinning) Pilgim-Sall 012

- (5) *Balon -na a bindixilin.*
 ball -DEF 3SG roll
 ‘The ball rolled (lit.: it)...’

Parallel to intransitive verbs of manner of motion, transitive verbs of manner of motion can only be used directionally with a modifying PP. This modifying PP accompanies a main verb of inherently directed motion or contains the conjunction marking extent, *haa* ‘until’. Motion verb plus PP is illustrated for *goro* ‘descend’ in example (6); motion verb plus conjunction is exemplified for *bindixilin* ‘roll’ in (7):

- (6) *Na goro a bindixilin na...*
 DEM:DIST descend [3SG roll with]_{PP}
 ‘That one descended rolling (lit.: rolling it)...’ Tomatoman-MAB 006

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

- (7) *A tee a bindixilin na,*
 3SG ascend [3SG roll with]_{pp}
 ‘It ascended rolling (lit.: rolling it),
a a bindixilin haa fuge -na ‘a.
 3SG 3SG roll until top -DEF with
 it rolled (lit.: rolled it) until the top.’ Tomatoman-MAB 004

Although it is not quite clear whether these verbs can implicate directed motion, it can definitely be said that they do not entail it. Consider the following description of a video stimulus in which a red ball goes up a mountain in a cart, spinning around in the cart:

- (8) *A tee -ma a firifiri ra sareet -εε kwi*
 3SG ascend -IPFV [3SG spin with]_{pp} [cart -DEF in]_{pp}
 ‘It (the red ball) is ascending spinning (lit.: it) in the cart.’ ECOM-Alpha H02

In example (8), a cart containing a ball moves up a ramp. While the ball is spinning in the cart, this spinning is non-directed, since the cart’s, not the ball’s movement causes the change of location. Example (8) also illustrates that a PP with transitive verbs of manner of motion is not interpreted as the Goal of a change of location, but merely as a location, just as for intransitive verbs of manner of motion.

For transitive verbs of manner of contact, it is also possible to further specify the location at which the contact was brought about in the second participant, as in (9):

- (9) *Balon nan a gɔnɔ a furi -n’ ii.*
 Ball FOC 3SG hit [3SG stomach -DEF at]_{pp}
 ‘The ball hit him in his stomach.’ Soccer2-042

The PP in (9) does not correspond to the Goal of a change of location, but in analogy to verbs of manner of motion just to a Location. This locational character of PPs with these verbs is further exemplified through example (10), where the clothes are not getting located in the water as a result of hitting them, but are just hit while lying in water.

CHAPTER 4

- (10) *Awa, a e gɔnɔ jee -n' ii.*
 Well, 3SG 3Pl hit [water -DEF at]_{pp}
 ‘Well she hit them (the clothes) in the water. (Of clothes lying in water in order to be washed)’ (Clothes are washed by hitting them repetitively.)

River 452

The realization-under-cessation test (cf. 1.8.4.3) reveals that transitive verbs of manner of motion and contact are atelic. If I am rolling a ball, as in (11), this entails that I have already rolled the ball (12); and if I am sweeping the courtyard (13), this entails that I have already swept it (14):

- (11) *N balon -na bindixilin -ma.*
 1SG ball -DEF roll -IPFV
 ‘I am rolling the ball.’

- (12) *N banta a bindixilin.*
 1SG PF 3SG roll
 ‘I have (already) rolled it.’

- (13) *N tand -εε mafitan -ma.*
 1SG courtyard -DEF sweep -IPFV
 ‘I am sweeping the courtyard.’

- (14) *N banta a mafitan.*
 1SG PF 3SG sweep
 ‘I have (already) swept it.’

The interpretation of *kwi* ‘in’ in temporal adjuncts confirms the atelic character of these verbs. *Kwi* here signals duration, not completion (cf. 1.8.4.4):

- (15) *Balon na a bindixilin ler keden nan kwi.*
 ball -DEF 3SG roll hour one FOC in
 ‘The ball rolled (lit.: it) for one hour.’

- (16) *E muga -r -εε xusin ler keden nan kwi.*
 3PL steal -NOM -DEF whip hour one FOC in
 ‘They whipped the thief for one hour.’

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

Just as for the intransitive verbs of manner of motion, the absence of a change of location component for transitive verbs of manner of motion and contact entails that the *kwi*-phrase is not interpreted as the time interval during which the event was completed. For any subinterval of the indicated duration, the event is construed as already realized:

- (17) *Minyti keden na dangu, a banta a bindixilin.*
minute one when pass 3SG PF 3SG roll
'When a minute has passed, the ball has (already) rolled.'

- (18) *Minyti keden na dangu, e banta a xusin*
minute one when pass 3PL PF 3SG whip
'When a minute has passed, they have (already) whipped him.'

All transitive verb encoding only manner of motion or contact, but not change of state or location, are taken to instantiate the following event structure template inspired by Rappaport & Hovav & Levin (1998), already introduced in 1.7.2.2 and repeated below:

- (19) [X CAUSE [Y ACT _{<MANNER>}]]

4.3.3. PARTICIPANT STRUCTURE OF TRANSITIVE MANNER VERBS

The transitive verbs of manner of motion and contact in Jalonke all have an Effector as their first participant. This Effector need not be animate or human for all the verbs in question; for many of them, it can also be an Instrument, as in (20), or a Force, as in (21).

- (20) *Gem -εε bar -εε gɔnɔ.*
rock -DEF dog -DEF hit
'The rock hit the dog.'

- (21) *Fɔj -εε kaidi -nee firifiri.*
wind -DEF piece of paper -DEF.PL spin
'The wind span the pieces of paper (around).'

Some of the verbs in this class have exclusively human Effectors. Examples for such verbs are *sumbu* 'kiss', or *kili* 'tickle'. For verbs with obligatorily human Ef-

CHAPTER 4

factors, it is lexically specified for the individual verbs whether they entail control (in the sense of Klaiman 1991, 1992) on behalf of their Effector or not. Thus, *sumbu* ‘kiss’ is incompatible with an uncontrolled interpretation (cf. 1.8.4.7), but *kili* ‘tickle’ is not:

- (22) **N m' an tewi -xi nde*
 1SG NEG 1SG do deliberately -PF INACT
 * ‘I didn’t do it deliberately

n a sumbu.
 1SG 3SG kiss
 to kiss him.’

- (23) *N m' an tewi -xi nde*
 1SG NEG 1SG do deliberately -PF INACT
 ‘I didn’t do it deliberately

n a kili. Nxo nxo boore bɔmbɔ,
 1SG 3SG tickle 1PL.E 1PL.E other beat
 to tickle him. We fought,

n a maxa a jii -nee ra, tun.
 1SG 3SG touch 3SG arm -DEF.PL with DISC
 I touched him at his arms, that was it.’

While the first participant of transitive verbs of manner of motion and contact can be identified as an Effector, it is less clear which thematic role their second participant bears. In some frameworks, this participant is analyzed as a Theme (Jackendoff 1990, Van Valin & LaPolla 1997). Since the lexical meaning of the verbs in question does not entail that the second participant undergoes a change of state or location, I am reluctant to identify this role as a Theme. The solution I adopt here is to leave the precise thematic role for the second participant of transitive process or manner verbs open. Rather, I admit that this participant is linked to object through a ‘Default Linking Rule’ as suggested by Levin & Rappaport Hovav (1995). Levin & Rappaport Hovav introduce three linking rules responsible for the linking of arguments that are the ‘Immediate Cause’ of an eventuality, that undergo the ‘Directed Change’ denoted by the verb, or the argument whose ‘Existence’ is asserted. (See 8.3.3 for a more detailed discussion of these linking rules). Partici-

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

pants which are not under the scope of any of these three linking rules are linked to object (or ‘internal argument’) by means of the Default Linking Rule. Although Levin & Rappaport Hovav formulate this additional linking rule mainly in order to account for English unaccusative verbs like intransitive *roll* and do not systematically extend it to transitive verbs, they conclude that

it is likely that once the range of data studied is broadened to include transitive verbs, the Default Linking Rule will apply to a variety of arguments that do not clearly fall under any linking rule, and, consequently, they will be direct internal arguments. It is well known that although verbs in which an agent acts on and affects a patient are transitive, there are also many transitive verbs that do not fit this mold, typically because their nonagent argument is not a patient. The Default Linking Rule would also apply to such nonpatient arguments, resulting in their expression as objects. (Levin & Rappaport Hovav 1995: 158)

4.4. TRANSITIVE MANNER-WITH-RESULT VERBS

4.4.1. MEMBERS OF THE CLASS OF TRANSITIVE MANNER-WITH-RESULT VERBS

Because of the considerable size of the class of transitive manner-with-result verbs, the semantic domains covered by verbs of this class are only summarized in Table 3 with a few representative verbs per domain. A complete list of all verbs is given in Appendix 4.

Table 3: Some transitive verbs of manner-with-result in Jalonke

Semantic domain	Verb	Gloss
Emission	<i>fuu</i>	‘excrete’
Creation and transformation	<i>jɪn</i>	‘cook (food)’
	<i>solo</i>	‘carve, sculpt (with special knife)’
	<i>dege</i>	‘sew’
Perception, cognition and emotion	<i>too</i>	‘see’
	<i>kolon</i>	‘know’
	<i>xɔn</i>	‘love’
	<i>ma-jɪn</i>	‘frighten, scare’ (DISTR only)
Verbs of cooking	<i>barabara</i>	‘boil’

CHAPTER 4

Semantic domain	Verb	Gloss
	<i>gilin</i>	‘fry’
	<i>gan</i>	‘burn, grill’
Verbs of blowing and filling	<i>rafee</i>	‘fill (lit.: CAUS-blow)’
	<i>feelun</i>	‘blow into, blow up’
Verbs of piercing	<i>sooti</i>	‘thread, pierce’
	<i>tumba</i>	‘pierce, perforate’
	<i>sɔxɔ</i>	‘pierce, weave, crochet’
Verbs of taking, holding and keeping	<i>suxu</i>	‘grasp, seize, take’
	<i>xɔrɔ</i>	‘take a handful’
	<i>tongo</i>	‘take (from/at a place)’
Verbs of attaching and detaching	<i>bolon</i>	‘untie, unfasten (with hands), pick (fruit, with hands or fruitpicker), separate, split (with any suitable instrument)’
	<i>xiri</i>	‘tie, fasten’
	<i>bilin</i>	‘tie around, encircle’
Verbs of searching and hunting	<i>fejen</i>	‘search, look for’
	<i>keri</i>	‘hunt, chase’
	<i>kwen</i>	‘hunt (animals)’
Verbs of removal	<i>baa</i>	‘extract, draw (water)’
	<i>gee</i>	‘dig out (tubers)’
	<i>guran</i>	‘pull out, weed’
Verbs of concealment	<i>biri</i>	‘bury, dig in (animals and inanimate objects)’
	<i>ma-luxun</i>	‘bury (human beings, lit.: DISTR-hide)’
Verbs of ingesting	<i>don</i>	‘eat’
	<i>min</i>	‘drink’
	<i>gerun</i>	‘swallow’
Verbs of cutting	<i>sege</i>	‘cut (in one stroke) (with knife, axe, machete, knife), fell (tree) (with axe, machete)’
	<i>xaba</i>	‘cut (in several sawing strokes) (with knife, saw, scissors, for crops with sickle)’

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

Semantic domain	Verb	Gloss
	<i>xεεrixεεri</i>	‘shred (with hands)’
Verbs of social interaction	<i>koogu</i>	‘marry’
	<i>beɲi</i>	‘divorce’

In the following, only some of the verbs that have special properties are addressed in some detail.

There are only two transitive verbs of emission, *fuu* ‘excrete’ and *bɔxun* ‘spit, vomit’. *Fuu* ‘excrete’ is limited to the excretion of *xɔli* ‘urine’ and *gwii* ‘feces’, which take the object position:

- (24) *A gwii -na fuu.*
 3SG feces -DEF excrete
 ‘He defecated.’

- (25) *A xɔl -la fuu.*
 3SG urine -DEF excrete
 ‘He urinated.’

Bɔxun ‘spit, vomit’ can occur with the vomited substance as object:

- (26) *Odial lenx -εε bɔxun.*
 Odial saliva -DEF spit
 ‘Odial spitted saliva.’

Baptism 007

All other verbs of emission in the Jalonke lexicon are lexicalized as intransitive verbs.

Manner-with-result verbs also comprise verbs of creation and transformation. These verbs are often also labeled ‘effected object activities’ (Dowty 1991) because the entity denoted by the object only comes into existence through the verb action, like a letter as the result of the action of writing it. Many of the ‘effected object activities’ also allow ‘affected objects’ or the raw material or ‘representation source’ (Dowty 1991) on which the action is carried out as their object. The two options are possible, for instance, for *dege* ‘sew’, and *solo* ‘carve, sculpt’, but not for *ɲin* ‘cook’, which only allows effected objects. Affected and effected objects

CHAPTER 4

are exemplified for *solo* below, (27) giving a sentence with an effected object, (28) giving a sentence with an affected object:

- (27) *A unun -na solo.*
 3SG mortar -DEF carve
 ‘He carved the mortar.’

- (28) *A wur -εε solo.*
 3SG wood -DEF carve
 ‘He carved the wood.’

Some verbs of the group of verbs of creation and transformation arguably might rather be viewed as ‘performance object activities’ (Dowty 1991), because their object might be said to exist independently of the verb’s action. This is, for instance, the case of singing ‘Que sera’ – the song exists independently of the event, but the performance does not. This holds for the Jalonke counterpart of *sing*, *sigεε saa* ‘sing’, literally ‘song-DEF lie (down)’. Since it is not obvious how to differentiate between performed and effected objects, they are grouped together. Some of the verbs in this group are simplex or derived posture verbs that enter fixed collocations with certain objects; these verbs of creation and transformation comprise, aside from ‘sing’, verbs such as *banxεε tii* ‘build (lit.: house-DEF stand (up))’, *banxεε saa* ‘thatch (lit.: house-DEF lie (down))’, *kiina madɔxɔ* ‘tell a story (lit.: story-DEF DISTR-sit (down))’, and *xandaa soo* ‘fence in (lit.: fence-DEF enter)’.

There is also a group of verbs of perception, emotion, and cognition among the manner-with-result verbs. The simplex forms of the verbs of perception – *too* ‘see’, *mεε* ‘hear’ – express uncontrolled perception; the corresponding derived forms, with the distributive in case of *ma-too* ‘watch’, with the causative in case of *ra-mεε* ‘listen’, denote controlled perception. ‘Smell’ is not encoded in a simplex verb in Jalonke, but in the fixed collocation *a xirεε mεε*, ‘hear its smell (lit.: 3SG smell-DEF hear)’. Other verbs in this group pertain to the expression of psychological states, cognitive states, emotions and other mental processes. These verbs include for instance *xɔn* ‘love’¹ and *kombu* ‘insult’.

¹ *Xɔn* ‘love’, seems to be a quite unique case: the verb is homophonous to the postposition *xɔn* ‘to(wards), along, because’. Synchronically, *xɔn* ‘love’ has all the distributional characteristics of a verb: it is inflected for tense and aspect and occurs with the verbal derivational prefixes. It is plausible to assume that both postposition and verb originated in a relational noun. Similar nonverbal predications expressing the notion of love, but not of other states, are attested in other Central Mande languages, e.g. in Bambara, where

A large group of verbs of manner and result is subcategorized for specific instruments through which the change of state encoded by the verb is brought about and for the specific manner in which this instrument is handled. For example, many of the Jalonke ‘cut’ verbs² are differentiated through the instrument they lexically specify. Thus *sege* ‘cut (in one stroke), fell’ implies a knife, an axe, or a machete. *Bii* ‘cut (in swinging, shaving movements)’ implies a sickle if applied to a grain-field, and a razor if applied to hair. *Xaba* ‘cut, saw’ involves a saw or a knife used like a saw. Jalonke ‘cut’ verbs are also noteworthy for the large number of lexicalized derived forms among them. Thus, *i-dogoti* ‘cut in half, cut in two pieces (lit.: IT-cut (of cloth, rope or fruit))’ and *i-bɔɔ* ‘tear, slit, split, cut along the long axis (lit.: IT-open)’ are not used in cases where repetition of the action denoted by the base verb is referred to, but have acquired specialized meanings, as evident from their glosses. This contrasts with derived forms that still can have an iterative meaning, as is the case of *i-sege* ‘chop, cut into sections (lit.: IT-cut)’ and *i-xaba* ‘cut, saw into sections (lit.: IT-cut)’. For the distributive and causative, similar irregularities are attested, as for instance *ma-xaba* ‘peel (with knife) (lit.: DISTR-saw)’, *ra-xaba* ‘prune, trim (lit.: CAUS-saw)’, or *ma-bɔɔ* ‘peel (with hands) (lit.: DISTR-open)’ and *ra-bɔɔ* ‘cut open, tear open, operate (lit.: CAUS-open)’.

4.4.2. FURTHER REMARKS ON TRANSITIVE MANNER-WITH-RESULT VERBS

Remarkably, only five verbs of Jalonke alternate between transitive (*Jürgen cursed the heat*) and intransitive active uses (*Jürgen cursed*). For these verbs, *bɔxun* ‘vomit’, *xaran* ‘read, learn, study’, *mugan* ‘be composed, find consolation’, *sali* ‘pray’, and *summun* ‘chat’, it cannot be ultimately established whether they are actually base transitive. In that case, they would suppress an object in their intransitive uses. Alternatively, all or some of the verbs in question might be base intransitive verbs. In that case, they would add an object in transitive uses. For this reason, these verbs are only preliminarily classified here as transitive verbs. The alternation they appear in is labeled unexpressed object alternation, although it is not quite clear in which direction it operates, and its properties are introduced in detail in 7.4.3.

the postposition **fɛ** conveys both the spatial meaning ‘beside’ and the emotion sense, but does not occur with verbal TAM marking (Bailleul 1996: 195, 198).

² The syntax and semantics of Jalonke verbs of cutting and breaking was investigated with the help of the ‘Cut & Break Clips’ (Bohnemeyer, Bowerman & Brown 2001). A detailed analysis of these verbs will be presented in Lüpke (in prep.-c).

4.4.3. EVENT STRUCTURE AND LEXICAL ASPECT OF MANNER-WITH-RESULT VERBS

Verbs that lexicalize both a change of state and the particular manner in which an Effector brings it about constitute by far the largest class of transitive verbs in Jalonke. Consider the ‘cooking’ verbs *barabara* ‘boil’, *gan* ‘grill, burn’, and *gilin* ‘fry’. Just like their English translational equivalents, they all denote a change of state from ‘uncooked’ to ‘cooked’. Additionally, these verbs differ in the specific manner in which that change occurs – the food item in question is either put into water, placed on a fire or put into a frying pan containing oil. It becomes evident that verbs specifying both manner and result are telic (at least when their Theme participant is interpreted as referential) through the interpretation of the imperfective with these verbs. This trait is illustrated through the results of the realization-under-cessation test (cf. 1.8.4.3) below. If rice is boiling, as in (29), it hasn’t boiled yet (30):

- (29) *A maalon -na barabar -aa.*
 3SG rice -DEF boil -IPFV
 ‘She is bringing the rice to the boil.’

- (30) *A men m’ aa barabara.*
 3SG yet NEG 3SG boil
 ‘She hasn’t brought the rice to the boil yet.’

Kwi-phrases with these verbs also qualify these verbs as telic changes of state. *Kwi*-phrases are understood as specifying the time interval during which the change denoted by the verb was completed rather than merely specifying the duration of the verb action (cf. 1.8.4.4):

- (31) *A maalon -na barabara ler keden nan kwi.*
 3SG rice -DEF boil hour one FOC in
 ‘She brought the rice to the boil in one hour.’
 * ‘She boiled the rice for an hour.’

The diagnostic for the interpretation of *kwi*-phrases is whether it is possible to assert for any subinterval shorter than the specified time interval that the event denoted by the verb has been realized. This is not the case for telic verbs of change of state. For any subinterval of (31), it is only possible to state that the event is in the course of being realized by using the verb in the imperfective, as in (29).

In view of these verbs having both a manner and a change of state or location component, they are analyzed as having the following complex event structure template, after Rappaport Hovav & Levin (1998) (cf. 1.7.2.2):

(32) [[x ACT _{<MANNER>}] CAUSE [BECOME [y <STATE>]]]

4.4.4. PARTICIPANT STRUCTURE OF MANNER-WITH-RESULT VERBS

The manner component of manner-with-result verbs entails an Effector as the first participant. Most of the verbs in this class have an animate Effector and default readings with the Effector as controlling the verb action, although the verb action can be construed as occurring in an uncontrolled way (cf. 1.8.4.7):

(33) *A m' aa tewi -xi nde a wure -nee gan*
 3SG NEG 3SG do deliberately -PF INACT 3SG sweet potato -DEF.PL grill
 'She didn't do it deliberately to grill the sweet potatoes.'

E bira -xi nde tee -n' ii.
 3PL fall -PF INACT fire -DEF at
 'They had fallen into the fire.'

The second participant of manner-with-result verbs is the one that undergoes a change of state or location. Hence, it is analyzed as being a Theme.

Three verbs encoding both manner and result lexicalize very specific restrictions on their active participant. Not surprisingly for a gender differentiated society, many events are stereotypically performed either by women (cooking, drawing water or caring for children) or by men (chopping wood, hunting or slaughtering). Most of these events can in untypical situations also be predicated of members of the opposite sex. Yet three verbs allow exclusively male Effectors: *futi* 'engage', *koogu* 'marry' and *beji* 'divorce'³ can only have male Effector participants (34). The same is true of an extended sense of *tongo* 'take' used in the sense of to take

³ In the case of *beji* 'divorce' the limitation to male agents is not conform with Islamic law which permits women to divorce on their own will. In the Jalonke reality, however, such a thing is unheard of. *Beji* has a different, though related, sense of 'let go', like in the letting go of somebody's arm. It is only in this sense that women can be active participants.

CHAPTER 4

in marriage. If predicated of women, the only possibility is them ending up as the Theme object of an active clause, as in (34), or as the Theme subject of a passive clause (35).

- (34) *E a fii mang -aa ma, manga -na a koogu.*
 3PL 3SG give king -DEF at king -DEF 3SG marry
 ‘They gave her to the king, the king married her.’ Kiridina 160

- (35) *Aissatu banta tongo.*
 Aissatu PF take
 ‘Aissatu has (already) been taken (in marriage).’

A subgroup of transitive manner-with-result verbs, verbs of cognition, emotion, and perception, often called verbs of psychological state, differs in participant structure and linking properties from the verbs introduced so far. These verbs either link the participant commonly labeled as Experiencer to subject and the one generally called Stimulus of the psychological state to object, as in the case of *xɔn* ‘love’, *maɲexin* ‘hate’, and *kolon* ‘know’, among others:

- (36) *I nxo xɔn, nxo fan i xɔn.*
 2SG 1PL.E love 1PL.E too 2SG love
 ‘You love us, we, too, love you.’ Ibrahimia 007

Or the verbs in question link the participant commonly called Stimulus to subject and the Experiencer to object – this is the case of only three verbs found so far – *maɲin* ‘frighten, scare’, *janfa* ‘betray, deceive’, and *raxutu* ‘surprise’:

- (37) *Kwɛɛ -ra -muxi nee n maɲin.*
 night -with -person -DEF.PL 1SG scare
 ‘The sorcerers scared me.’

Tentatively, I assume that for cases like (37), corresponding to the English ‘frighten’ verbs, the first participant is construed as an Effector rather than as a Stimulus. This Effector consequently causes a change of state in the second participant, who then corresponds to a Theme rather than to an Experiencer. This analysis is supported by the aspectual properties of the verbs in question, which are those of all the other verbs of change of state. It is more difficult to decide on the participant structure of verbs like *xɔn* ‘love’ in (36), equivalent to the English

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

‘fear’ verbs. Whether the thematic roles of Experiencer and Stimulus are appropriate for these verbs, what determines the linking of these verb’s participants, and how linking properties dovetail with the event structures of these verbs cannot be decided yet. The thematic roles of these verbs must remain a subject of future research on the following grounds. Although the verbs in question are stative on most readings, as can be diagnosed through the present time reference of the zero-marked verb in (36), this is not their exclusive event structure. Some of these verbs, particularly *kolon* ‘know’ also occur in the imperfective (38) and in the perfect (39).

- (38) *Ka, i nen kolon -ma men -n’ ii?*
 DISC 2SG what know -IPFV there -DEF at
 ‘Well, what are you knowing there (in the village)?’

Ce qui est scientifique, a mun sɔtɔ.
 (French) 3SG NEG obtain
 What is scientific, it is not obtained.’ Maneah 927

- (39) *N a kolon -xi xɔri go!*
 1SG 3SG know -PF now DISC
 ‘I have known it now, okay!’ Diiram1-005

In addition, some stative intransitive verbs of the same semantic domain, e.g. *rafan* ‘be nice, be agreeable’ optionally take an Experiencer in a postpositional phrase. The limited number and rare occurrence of these verbs in texts does not allow any conclusions on their semantic similarities and differences to date. In view of the notorious cross-linguistic difficulties of motivating the differences in linking for Experiencer subjects and Experiencer PPs, and of the ongoing debate on the participants of verbs of psychological state in general (Dowty 1991, Foley & Van Valin 1984, Jackendoff 1990, Grimshaw 1990, Zaenen 1988, *inter alia*), no assumptions on the participant structure of these verbs are made here.

Two verbs of piercing, *tumba* ‘pierce, perforate’, and *sooti* ‘thread, pierce’, allow two different configurations, reminiscent of the locative alternation in English (*Sonja piled strawberry cake onto her plate* vs. *Sonja piled her plate with strawberry cake*):

CHAPTER 4

- (40) *N saagiran -na tumba dugi -n' ii.*
 1SG needle -DEF pierce cloth -DEF at
 ‘I pierced the needle into the cloth.’
- (41) *N dug -εε tumba saagiran -na 'a.*
 1SG cloth -DEF pierce needle -DEF with
 ‘I pierced the cloth with a needle.’
- (42) *N saagiran -na sooti mango -n' ii.*
 1SG needle -DEF pierce mango -DEF at
 ‘I pierced the needle into the mango.’
- (43) *N mang -ɔɔ sooti saagiran -na 'a.*
 1SG mango -DEF pierce needle -DEF with
 ‘I pierced the mango with the needle.’

I assume that this alternation is a morpholexical alternation (see 1.7.2.4 and chapter 7) for several reasons. First, the alternation coincides with differences in linking which most likely result from different participant structures for the variants. In (40) and (42), the needle is construed as the Theme, hence linked to object, and the pierced entity is construed as the Goal and realized in a PP. In (41) and (43), in contrast, the pierced entity is construed as the Theme, and the needle corresponds to the Instrument used to affect the Theme. Secondly, the alternation does not concern all semantically eligible verbs. Other verbs of piercing, such as *sɔxɔ* ‘pierce’, or other verbs of related semantic domains where an entity is moved into another entity, like *rafée* ‘fill’ or *futu* ‘blow up’ do not exhibit this alternation. The non-alternating verbs all realize the ‘container’ or ‘pierced entity’ as the Theme object, and the ‘substance’ or ‘piercing entity’ as the Instrument, linked to adjunct. It is likely that, as in English, the with-alternant of the alternation goes hand in hand with entailing complete affectedness of the pierced entity, whereas the into-alternant entails only partial affectedness. In view of the marginality of the alternation, however, this intuition cannot be proven. As other linking variations concerning the second and third participant of transitive verbs encoding three participant events, the alternation is not treated separately in chapter 7 and not investigated in the quantitative study in chapter 9. This different treatment with respect to the applicative and the unexpressed object alternations is due to the impossibility to study it in the same detail: the third participant of these verbs is not syntactically expressed in texts in most cases.

4.5. TRANSITIVE RESULT VERBS

A small number of transitive verbs are verbs of pure change of state or result verbs. These verbs lack a manner component that encodes the specific way in which the change of state comes about. This class contains verbs of inherently directed motion, such as *i-tee* ‘lift, raise (lit.: IT-ascend)’ and *ma-goro* ‘lower (lit.: DISTR-descend)’, and verbs of breaking, for example *myñuxun* ‘crush, smash’ and *wuru* ‘crack’. Most of the verbs encoding only the result subevent, but not specifying the nature of the causing subevent, have an intransitive argument structure (see 3.4). Some of these verbs belong to the class of causative/inchoative alternating verbs introduced in chapter 5. The existence of a class of transitive, non-alternating verbs of pure change of state in Jalonke violates predictions made by Haspelmath (1993), Guerssel, Hale, Laughren, Levin & White Eagle (1985), Levin (1993), and Levin & Rappaport Hovav (1995). Guerssel *et al* postulate a contrast between ‘break’ verbs on the one and ‘cut’ verbs on the other hand, and Haspelmath (1993), Levin (1993) and Levin & Rappaport Hovav (1995) extend this claim to all verbs of change of state. Their prediction is that ‘break’ verbs, or all verbs encoding only the result of a state change, leaving the specific manner of that state change in the dark, have an argument structure different from that of ‘cut’ verbs. More generally, verbs not encoding the manner of a change of state are expected to differ from verbs that lexically encode the manner and/or instrument through which that change is instigated. ‘Break’ verbs, or all result verbs, are expected to be either intransitive or to participate in the causative/inchoative alternation. ‘Cut’ verbs on the other hand are not expected to appear without their external cause argument unless passivized. The logic behind this expected different syntactic behavior for ‘cut’ and ‘break’ verbs is that verbs that lexicalize specific manners imply Effectors acting in that specific manner. Similarly, verbs that are subcategorized for instruments also imply Effectors handling them. The corresponding event descriptions therefore cannot be construed without a causing subevent. Verbs that leave the causing subevent unspecified, in contrast, can focus on the change subevent and picture the corresponding event as uncaused. A problematic case for this assumption, at least if it is not limited to verbs of breaking, is ‘kill’, if it does not alternate but has a suppletive intransitive counterpart ‘die’. This is the case of Jalonke, where *faxa* ‘kill’, although not specifying the means of killing, does not participate in the causative/inchoative alternation, but a different intransitive root, *tuu* ‘die’, exists.⁴ As Haspelmath (1993) observes, ‘kill/die’ are realized in differ-

⁴ CM languages exploit different lexicalization patterns for ‘kill/die’: Soso has two different verb roots, *fāxá/fakha* ‘kill’ and *ṭú/tu* ‘die’. For the latter, Houis (1963), whose tran-

CHAPTER 4

ent lexical roots in disproportionately many languages. Haspelmath argues that dying and killing are of such an enormous social and moral significance that “many languages allow themselves the luxury of different roots for these two verbs.” (Haspelmath 1993: 106). An alternation would then be preempted through the existence of a different lexical root. As Clark & Clark (1979) remark, regular derivational patterns tend to be blocked if their equivalents are already lexically represented. That the form corresponding to the alternant for other verbs of the same class exists lexically, might in addition to the cultural significance be explained through the high frequency of occurrence, which is known to be correlated with irregularity and suppletion (Bybee 1985).

To a large degree, the cross-linguistic predictions concerning the relation between lexical meaning and argument structure properties are borne out by Jalonke: manner-with-result verbs passivize, but don’t detransitivize by means of the inchoative alternation. In contrast, result verbs are either lexically intransitive or appear without an external cause argument without entailing passivization in the case of causative/inchoative alternating verbs. The verbs in the focus of this section, ‘kill’ notwithstanding, are the exception to this general pattern, though. In terms of lexical components of meaning, they are equivalent to the other intransitive or causative/inchoative alternating verbs of pure change of state or result verbs. Yet, transitive result verbs only ever yield passive readings in intransitive clauses, and in this respect pattern with verbs of change of state with a complex event structure. Complex verbs of change of state contain a causing subevent that spells out manner and/or Instrument and a change subevent. It is a matter of future research to find out whether these verbs have some meaning components that distinguish them from causative/inchoative or intransitive verbs of pure change of state or whether they must be accepted as idiosyncratic cases.

scription is the one given before the slash, give the French translation ‘crêver’; Friedländer (1974), whose transcription appears after the slash, glosses it as ‘die (of animals)’. Friedländer gives the additional sense of ‘die’ for fakha. This conforms to Houis’ observation that fāxá ‘kill’ can also be used in contexts without external causation. Jeli (Tröbs 1998) and Koranko (Kastenholz 1987) employ one alternating verb root, kpã ‘kill, die’ in the case of Jeli, and fāa ‘kill, die’ in the case of Koranko. Bambara, in contrast has two different lexemes, fāga ‘kill’ and sà ‘die (Bailleul 1998). It seems that Jalonke has expanded the use of intransitive tuu to cover also the dying of human beings; although fāxa ‘kill’ sometimes appears without an external cause, it is never occurred as happening spontaneously, but in these cases viewed as caused by Allah. The same situation seems to hold in Dialonké, where, according to Creissels (ms.), fɔ́qɔ́ corresponds to ‘kill’, and tũú to ‘die’.

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

4.5.1. MEMBERS OF THE CLASS OF TRANSITIVE RESULT VERBS

In view of the marginality of this class, all its members are listed here. Table 4 gives an inventory of the verbs of inherently directed motion that have a transitive argument structure.

Table 4: All transitive verbs of inherently directed motion in Jalonke

<i>i-tee</i>	‘lift, raise (lit.: IT-ascend)’
<i>ma-goro</i>	‘lower (lit.: DISTR-descend)’
<i>ma-koree</i>	‘approach’ (DISTR only)
<i>ma-mini</i>	‘move out of, move away from (lit.: DISTR-exit)’
<i>ma-siga</i>	‘move away from (lit.: DISTR-go)’

With the exception of *itee*, having the iterative prefix, all the verbs in this group occur with the distributive prefix *ma-*. This prefix seems to have taken on the function of causativizing verbs of inherently directed motion rather than serving its regular function of distributing the denoted event over several participants. (See 2.8.3 for an overview of the functions of verbal prefixes).

In analogy to their corresponding intransitive simplex forms introduced in 3.4, these verbs all have a directional meaning component, although the direction towards a Goal or away from a Source differs between the verbs. *Masiga* ‘move away from, remove’ for instance denotes movement away from Source (44); *ma-goro* ‘lower’ movement towards a Goal (45):

- (44) *I masiga n na den!*
 2SG move away 1SG with DISC
 ‘Move away from me!’ Nalla 059

- (45) *A a jaa -na ma goro a ma...*
 3SG 3SG eye -DEF lower 3SG at
 ‘He lowered his eyes on it...’ Canary M.Bala 019

Transitive result verbs denoting events of breaking are listed in Table 5. The remaining verbs of change of state not specifying their causing subevent are given in Table 6.

CHAPTER 4

Table 5: All transitive result verbs of breaking in Jalonke

<i>gerensen</i>	‘scatter, shatter, smash’
<i>ma-koto</i>	‘close (DISTR only)’
<i>mupuxun</i>	‘crush, smash’
<i>wuru</i>	‘break, crack’

Table 6: All other transitive result verbs in Jalonke

<i>faxa</i>	‘kill’
<i>ra-baa</i>	‘do, make (lit.: CAUS-extract)’
<i>niga</i>	‘do, make’

4.5.2. EVENT STRUCTURE AND LEXICAL ASPECT OF TRANSITIVE RESULT VERBS

The transitive result verbs fall into two groups: (1) the verbs of inherently directed motion among them (such as *makɔrɛɛ* ‘approach’) only entail directed change without a discrete end state, just as their intransitive counterparts. The absence of a discrete end state from the lexical meaning or the atelicity of these verbs is illustrated through the result of the realization-under-cessation test introduced in 1.8.4.3. If one is moving a table as in (46), one has already moved it, as in (47).

- (46) *N taabal -na masig -aa.*
 1SG table -DEF move away -IPFV
 ‘I am moving the table away.’

- (47) *N banta a masiga. N a masig -aa nde sɔnnɔn.*
 1Sg PF 3SG move away 1SG 3SG move away -IPFV INACT yet
 ‘I have (already) moved it away. I will move it further away.’

That the change of state encoded by these verbs is atelic further becomes evident from the duration-completion test introduced in 1.8.4.4. This test reveals that a *kwi*-phrase (48) is understood as specifying the duration of the event, not its completion, and that the event can be seen as completed (49) before the specified time interval has passed.

- (48) *A saagaa -na magoro minyt fidin nan kwi.*
 3SG basket -DEF lower minut two FOC for
 ‘He lowered the basket for two minutes.’

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

(49) *Minyt keden na dangu, a banta a magoro.*

minut one when pass 3SG PF 3SG lower

‘When a minute has passed, he has (already) lowered it.’

That these verbs nevertheless encode a change of location is demonstrated through the result for the degree-of-change test introduced in 1.8.4.5. This test is applied to the verb *itee* ‘lift, raise’ in a sentence with a quantized Goal (50). Consequently, the clause receives a telic interpretation, as illustrated through the result of the realization-under-cessation test in (51).

(50) *A saagaa -na itee haa fuge -na ‘a.*

3Sg basket -DEF lift until top -DEF with

‘He lifted the basket up to the top.’

(51) *A tagi -n’ ii, a men m’ aa itee haa fuge -na ‘a.*

3SG middle -DEF at 3SG yet NEG 3SG lift until top -DEF with

‘In the middle of it, he didn’t lift it yet to the top.’

(2) The remaining verbs in this class – as *gerensen* ‘scatter, shatter’ – entail a result state that is incompatible with the source state of the change they denote. That discrete change of state is part of the lexical meaning of these verbs is illustrated once more through the realization-under-cessation test – (52) and (53) – and duration-completion test – (54) and (55).

(52) *N taasi -dii -na muguxun -ma.*

1SG cup -DIM -DEF crush -IPFV

‘I am crushing the cup.’

(53) *N men m’ aa muguxun.*

1SG yet NEG 3SG crush

‘I haven’t crushed it yet.’

CHAPTER 4

- (54) *N taasi -dii -na mujuxun minyt keden nan kwi.*
 1SG cup -DIM -DEF crush minute one FOC in
 ‘I crushed the cup in one minute.’

- (55) *Beenun minyt keden xa dangu, n men m' aa mujuxun.*
 before minute one SUBJ pass 1SG yet NEG 3SG crush
 ‘Before a minute has passed, I haven’t crushed it yet.’

Since, as argued in 1.7.2.2, only the presence or absence of a change of state subevent is encoded at the level of event structure, not its telicity, the following template, again following Rappaport Hovav & Levin (1998), is assumed for result verbs:

- (56) [X CAUSE [BECOME [Y <STATE>]]]

4.5.3. PARTICIPANT STRUCTURE OF TRANSITIVE RESULT VERBS

As their intransitive counterparts, the verbs in this class have a Theme as the argument of a BECOME predicate. In addition, they have a participant taking the Effector role. Control (in the sense of Klaiman 1991, 1992) over the event on behalf of the Effector is not entailed, as exemplified through the acceptability of these verbs with the negated form of ‘do deliberately’ in the matrix clause:

- (57) *N m' an tewi -xi nde*
 1SG NEG 3SG do deliberately -PF INACT
 ‘I didn’t do it deliberately

n taasi -dii -na wuru.
 1SG cup -DIM -DEF break
 to break the cup.

N a bira, nan a niga -xi.
 1SG 3SG fall FOC 3SG do -PF
 I dropped (lit.: fell) it, that has done it.’

There is no specific manner or instrument of acting entailed for these verbs’ Effectors. This is illustrated by the following two examples – in (58), the throwing of a ball, as stated openly in the following clauses, results in breaking a window, in

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

(59), the manner is completely left open. When asking consultants about possible means of bringing about the state change encoded by *wuru* ‘break, crack’ in (59), they offered all kinds of scenarios – by dropping the lamp, by stepping on it, by throwing it, etc. In (57) above, in contrast, the breaking of the cup was caused by dropping it.

- (58) *E feneter -na wuru. E balon -na wol’*,
 3PL window -DEF break 3PL ball -DEF throw
 ‘They broke the window. They threw a ball,

ε ε gɔnɔ a kɔbi -n’ ii.
 3PL 3SG hit 3SG be bad -DEF at
 they hit it badly.’

Quick-Alpha4-010

- (59) *N nafa boore -na a lamp -ɔɔ xel -εε wuru de!*
 1SG SUBJ.NEG other -DEF POSS flashlight -DEF egg -DEF break DISC
 ‘I shouldn’t break the other’s lightbulb (lit.: the lamp’s egg)!’ Ataya 212

4.6. TRANSITIVE VERBS WITH OPTIONALLY THREE PARTICIPANTS⁵

Like many other languages, Jalonke allows several different syntactic realizations or linking patterns for ‘three-place verbs’. Because of the special properties of transitive verbs denoting these events, the structure of this section deviates from that of the other sections on lexical argument structure. The event structure of three-place verbs is not discussed, because they share the aspectual properties of manner-with-result verbs addressed in 4.4. Rather, the section is organized according to the most noteworthy characteristics of this class of verbs – the variation in linking for the second and third participant and the differences in marking of the third participant. Section 4.6.1 focuses on the adjunct character of the third participant of these verbs. Section 4.6.2 is dedicated to the frame-semantic roles of these verbs and how they can account for their common properties irrespective of differences in thematic roles and linking properties. Section 4.6.3 takes up typological differences in linking for three-place predicates and describes which of the cross-linguistically attested patterns are realized in Jalonke. The postpositions involved in the marking of the third participant are introduced in 4.6.4. Section 4.6.5 and its

⁵ Parts of this section appear in Lüpke (submitted).

CHAPTER 4

subsections introduce the participant structure for the verbs in question and group them according to the linking patterns and alternations in which they participate.

4.6.1. THE ADJUNCT CHARACTER OF THE THIRD PARTICIPANT OF TRANSITIVE VERBS WITH OPTIONALLY THREE PARTICIPANTS

Since only two participants of a verb denoting a three participant event can be core arguments of the verb (see 2.2.3), the third one must be accorded adjunct status. The participant thus downgraded is not always the same across verbs. Consider the two verbs of transfer of information *fala* ‘speak, tell, say’ in (60) and *maxorin* ‘ask’ in (61). For *fala*, the animate Goal is realized in a PP, for *maxorin*, as the direct object (as in English).

- (60) *N tɛn na tɔɔr -ɔɔ fala a bɛ...*
 1SG EMPH DEM:DIST suffer -DEF speak 3SG for
 ‘I told him that suffering...’Forotonee 124

- (61) *E i maxorin -ma nde kaidi nan ma.*
 3PL 2SG ask -IPFV INACT paper FOC at
 ‘They are going to ask you for the(piece of) paper.’Alpha 097

Moreover, two different postpositions mark the third participant of these two verbs, and three different postpositions are used for three-place verbs – an issue that is discussed in 4.6.3. More important for the argument-adjunct distinction is the fact that the third participant of these verbs, regardless of its thematic role and marking, can be omitted. In natural discourse the third participant is actually omitted in most cases, as illustrated below for *fala* ‘speak’, *maxorin* ‘ask’, *fii* ‘give and *samba* ‘present’.

- (62) *Nde na fala -xi?*
 who DEM:DIST say -PF
 ‘Who has said that?’Ataya 627

- (63) *E Seexu Muusa maxorin.*
 3PL Sheikh Muusa ask
 ‘They asked sheikh Muusa.’Jalonke 080

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

- (64) *I xa dyt -εε fii!*
 2SG SUBJ tea -DEF give
 ‘You should give tea!’ Alpha1-099

- (65) *Nxo e fop samba.*
 1PL.E 3PL all (Pulaar) present
 ‘We presented them all.’ Labe 403

The optionality of the third participant is a clear index of its adjunct properties. Subjects can never be omitted in Jalonke, and objects, as laid out in 7.4.3, can only be omitted for five transitive verbs under very specific readings. This, in addition to syntactic tests addressed below, indicates that only subjects and objects, but not participants encoded in postpositional phrases can qualify as arguments in Jalonke.

This being said, there is nevertheless some evidence that some of the verbs introduced in this section take subcategorized adjuncts or ‘oblique arguments’ (Van Valin & LaPolla 1997). As demonstrated above and spelled out in more detail below, the third participant of these verbs is syntactically an adjunct. However, for some verbs, in an alternative syntactic realization, this adjunct participant can be linked to direct object, hence become a core argument. This possibility of alternation is illustrated through the two different realizations for the verb *doni* ‘lend’ in the following two examples:

- (66) *I a doni -m’ an ma nde!*
 2SG 3SG lend -IPFV 1SG at INACT
 ‘You will lend it to me!’ Pilgrim-Sall 011

- (67) *N maŋi i doni ra n ma sii -na ma.*
 1SG can 2SG lend with 1SG POSS goat -DEF at
 ‘I can lend you my goat.’ Nga 223

This behavior favors an analysis of the alternating verbs in question as having three core participants – peripheral participants or adjuncts cross-linguistically cannot be advanced to a direct argument (Van Valin & LaPolla 1997). Thus, in English, the picture, which is an adjunct in (68), would qualify as an argument, because it can also be realized as the direct object of English *present* in (69). *Xenos* in (70), in contrast would not count as an argument, because it cannot be the direct object of English *buy*.

CHAPTER 4

- (68) I presented Loretta with a picture.
 (69) I presented a picture to Loretta.
 (70) I bought the picture frame at Xenos.

Not all verbs that might be said to involve three participants in Jalonke allow such alternating syntactic realizations, however – *fii* ‘give’ (cf. (64) above, (71) below) occurs only in one pattern, unlike its English translational equivalent *give*. Nevertheless, the non-alternating verbs in question do not all exhibit identical linking patterns. Rather, non-alternating three-place predicates realize one of the patterns attested for alternating verbs. The adjunct participants of the non-alternating verbs are marked by those postpositions that also appear in third-participant marking of the alternating verbs, supporting the view that their participants involve identical thematic roles. Non-alternating verbs thus exhibit some similarity to alternating verbs in that the alternation in which the latter appear offers some evidence for the verbs having three arguments. Since it cannot be excluded that the verbs not attested in alternations so far can participate in them under specific circumstances, non-alternating and alternating optionally three-place verbs are treated on a par here. The scarcity of these verbs with all their participants syntactically expressed in the corpus combined with the difficulty of controlling and varying potentially relevant features for an alternation such as heaviness, animacy, etc., in elicitations means that for the time being no commitment with respect to the argumenthood of the participant encoded in a PP can be made.

4.6.2. FRAME-SEMANTIC ROLES AND LINKING DIFFERENCES FOR TRANSITIVE VERBS WITH OPTIONALLY THREE PARTICIPANTS

As remarked above, there is considerable variability in Jalonke with respect to linking of second and third participants of three-place verbs, and at the same time there are differences in marking for the third participant. Consider the following two examples, involving two distinct verbs of change of possession:

- (71) *A xij -εε fii -ma dii jər -εε ma.*
 3SG milk -DEF give -IPFV child young -DEF at
 ‘She is giving milk to the young child.’Chickens 004

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

- (72) *Tumaani e samba kaseti -na 'a.*
 Tumaani 3PL present cassette -DEF with
 'Tumaani presented them with a cassette.'

Labe 404

In example (71), the Theme of 'give' is realized as the object, and the animate Goal (or Recipient) surfaces as an adjunct marked by *ma* 'at'. In (72), what seems to be the animate Goal of 'present' is in object position and bears the Theme role. Additionally, what seems to be the Theme, since it undergoes a change of location, the cassette, appears as an adjunct in (72). This adjunct moreover is marked like an Instrument by the postposition *ra* 'with'. Clearly, it makes no sense to assert that the Theme of (72) is realized as the Instrument of the change of possession event. Yet we would like to capture the intuition that the cassette in (72) has the same function in the change of possession as the milk in (71). This is where frame-semantic roles (introduced in 1.8.5) come into the picture. By admitting identical frame-semantic roles we can account for the intuitive commonalities between the participants of the verbs 'give' and 'present' in examples (71) and (72), irrespective of the differences in thematic roles and consequent syntactic alignment present. The two verbs belong to a semantic domain that evokes the same frame-semantic roles: 'he' and 'Tumaani' instantiate the 'giver'; 'the child' and 'they' the 'receiver'; and 'the milk' and 'the cassette', the transferred 'gift'. For *fii* 'give', however, the 'gift' corresponds to the Theme, and the 'receiver' to the animate Goal. For Jalonke *samba* 'present', in contrast, the 'receiver' is realized as the Theme, whereas the 'gift' serves as the Instrument to affect the Theme. The argument structure then determines which thematic role will be realized in what syntactic position in default linking. The association of identical semantic frames to different thematic roles accounts for lexical differences like those between Jalonke *fii* 'give' and *samba* 'present'. Alternations involving variation in linking from thematic roles to grammatical relations present a different case. Such an alternation has been exemplified for the verb *doni* 'lend' in (66) and (67) above.

With respect to the linear order of participants, this alternation corresponds to the English 'Dative Alternation': in (71), the transferred Theme – 'the gift' – is syntactically profiled as the object, the animate Goal – the 'receiver' as the adjunct. This sequencing is equivalent to the 'to-variant' of the 'Dative Alternation'. In (72), an inverse linking order is present: the animate Goal – the 'receiver' – is linked to object, the Theme – the 'gift' – to adjunct. Note that in both examples, the 'giver' corresponds to the Effector, linked to subject. Regarding the order of participants, but not their syntactic status, this ordering is consistent with the 'double object

variant' of the English 'Dative Alternation'. In these cases, the difference between the two alternants does not originate in a linking of identical semantic frames to different thematic roles, but in linking differences one level lower, at the mapping of thematic roles to grammatical relations.

4.6.3. CROSS-LINGUISTIC VARIATION AND PATTERNS ATTESTED IN JALONKE FOR THE LINKING OF PARTICIPANTS

Languages are known to vary along cross-linguistically salient parameters with respect to the expression and linking of the participants of three-participant events. These parameters are:

- (i) The syntactic status of the third participant
- (ii) Pivot properties of their participants
- (iii) Linking of their participants in comparison to transitive verbs

As already obvious from the examples given above, Jalonke, too, allows several patterns for the construal of three-participant events. These patterns are systematized in the following paragraphs in terms of the crosslinguistically relevant parameters.

(i) The syntactic status of the third participant. The adjunct character of the third participant, discussed in 4.6.1 above, distinguishes Jalonke from other languages that employ the 'double-object' or 'direct' strategy (Austin, Evans & Margetts, in prep.). In the 'double object' or 'direct strategy', the Effector, the Theme and the animate Goal (or Recipient) of a three-participant event are encoded like direct arguments (*I gave Jürgen the paper*). Other languages/constructions make use of the 'indirect object' or 'dative strategy' (Austin, Evans & Margetts, in prep., Blake 2001). In this strategy, the animate Goal is case-marked differently from direct objects and adjuncts (German *Ich gab ihr einen Blumenstrauß* 'I gave her a bunch of flowers (lit.: I-NOM gave her-DAT a bunch of flowers-ACC)'). The use of postpositions for the marking of the third participants that have other functions than marking Goals or Instruments reveals that Jalonke does not employ the indirect-object strategy. Jalonke adopts a third mechanism, termed the 'oblique strategy' by Austin, Evans & Margetts, and marks the third participant with an adposition (*I gave the paper to Jürgen*). Most verbs in Jalonke may be said to instantiate the 'locative' subtype of the 'oblique strategy', selecting for a locative (or originally locative) postposition to mark the adjunct participant coding the animate

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

Source or Goal. Two groups of verbs in Jalonke use other variants of the ‘oblique strategy’. Three verbs employ the ‘benefactive strategy’ (Newman 1998, Austin, Evans & Margetts, in prep.) exclusively to encode transfer, marking the ‘target’ participant of a transfer like a Beneficiary. For all other verbs of transfer, the Beneficiary is encoded differently from Source or Goal, the former being expressed by a PP headed by *be* ‘for’, the latter by *ma* ‘at’. Other verbs follow exclusively or alternatively the ‘instrumental strategy’, also cross-linguistically common according to Newman (1998a, 1998b) and Austin, Evans & Margetts (in prep.). These verbs treat the ‘target’ of a transfer as the Theme, affected by the ‘good’ that is encoded as the Instrument of the transfer in a PP headed by *ra* ‘with’.

Thus, in Jalonke, as is cross-linguistically the norm, the order of the second and third participant is the most salient parameter of variation. Since this order can differ regardless of the syntactic status of the third participant, in the following, I use labels that specify the thematic role of the second and third participants and their linear order. Thus, I use ‘Theme-Source/Goal strategy’ to refer to those verbs of the ‘oblique strategy’ that realize the Source/Goal as the adjunct. Accordingly, I employ the labels ‘Theme-Beneficiary strategy’ instead of ‘benefactive strategy’ and ‘Theme-Instrument strategy’ instead of ‘instrumental strategy’. The correspondences between the labels proposed by Austin, Evans & Margetts and my labels as well as brief characterizations of the strategies are given in Table 7.

Table 7: Correspondence between labels and characterization of strategies

Label used by Austin et al/Newman	Labels used for Jalonke (linear order of 2 nd and 3 rd participant)	Postposition that marks the adjunct	Linking of semantic frames to thematic roles and grammatical relations
‘Locative strategy’	‘Theme-Source/Goal strategy’	<i>ma</i>	‘Good’ as Theme → object ‘Target’ as Source/Goal → adjunct
	‘Source/Goal-Theme strategy’	<i>ma</i>	‘Target’ as Source/Goal → object ‘Good’ as Theme → adjunct
‘Benefactive strategy’	‘Theme-Beneficiary strategy’	<i>be</i>	‘Good’ as Theme → object ‘Target’ as Beneficiary → adjunct
‘Instrumental strategy’	‘Theme-Instrument strategy’	<i>ra</i>	‘Target’ as Theme → object ‘Good’ as Instrument → adjunct

CHAPTER 4

(ii) **Pivot properties of the participants.** Passivization patterns are relevant to this second parameter that distinguishes languages and constructions according to the syntactic properties, or ‘pivot properties’ (Van Valin & LaPolla 1997: 275ff.) of the arguments of three-participant verbs. Languages can, according to Bresnan & Moshi (1990) and Austin, Evans & Margetts (in prep.), be symmetrical, that is, treat animate Goal and Theme in the same way with respect to control properties in the syntactic sense, as regards relativization, questioning, etc.. Languages can also differentiate in the morphosyntactic properties between animate Goal and Theme; then, they are asymmetrical. With respect to passivization, Jalonke three-place verbs behave like transitive verbs: whatever its thematic role, only the argument that is the direct object can be promoted to subject position. This promotion is barred for adjuncts, regardless of the thematic role they bear to the verb. Thus, Jalonke treats direct objects and adjuncts as formally different, regardless of their thematic roles. The following sets of active-passive pairs illustrate this asymmetry. They all feature the verb *muga* ‘steal’ for which either the Theme or the Source of the theft can be linked to direct object. In (73), the Theme is realized as the direct object, and the Source as the adjunct. The only possible passive alternation promotes the direct object, in this case the Theme, to subject (74).

- (73) *E mɔntur -na muga Maimuna ma.*
 3PL watch -DEF steal Maimuna at
 S O adjunct
 ‘They stole a watch from Maimuna.’

- (74) *Mɔntur -na muga Maimuna ma.*
 watch -DEF steal Maimuna at
 S adjunct
 ‘A watch was stolen from Maimuna.’

In (75), *muga* ‘steal’ appears with the Source in direct object position, and the Theme realized as the adjunct. Again, the participant occupying the direct object slot is promoted to subject in the passive counterpart in (76), although this time, its thematic role is that of the Source and not of the Theme of the transfer.

- (75) *E Maimuna muga mɔntur -na ma.*
 3PL Maimuna steal watch -DEF at
 S O adjunct
 ‘They stole a watch from Maimuna (lit.: They stole Maimuna at a watch).’

- (76) *Maimuna muga mɔntur -na ma.*
 Maimuna steal watch -DEF at
 S adjunct
 ‘Maimuna was stolen a watch.’

(iii) **Linking of thematic roles to grammatical relations of three place verbs compared to the linking of transitive verbs.** While all nominative-accusative languages map the Effector onto the subject slot, some languages treat the Theme of a three-participant verb parallel to the Theme of a transitive verb and single out the Source/Goal. These languages are called ‘direct object vs. indirect object’ languages by Austin, Evans & Margetts (in prep.). Others have the Source/Goal of a three-participant verb in the same syntactic slot as the Theme of a transitive verb, treating the Theme of a three-participant verb (or ‘notional direct object’ in Dryer’s (1986)) terms differently. These languages distinguish between ‘primary’ and ‘secondary’ objects (Dryer 1986) rather than between ‘direct’ and ‘indirect ones’.⁶ The situation is further complicated by the fact that languages can adopt more than one strategy. With respect to ‘direct-indirect’ vs. ‘primary-secondary’ alignment, this is also the case of Jalonke, as illustrated by the different alignment possibilities for *muga* ‘steal’ in (73) and (75) above. Since Jalonke has neither indirect nor secondary objects, but realizes both as adjuncts, for terminological clarity I use the terms ‘Theme-Source/Goal-strategy’ instead of ‘direct-indirect strategy’, and ‘Source/Goal-Theme-strategy’ instead of ‘primary-secondary strategy’, referring once more to the linear order of the second and third participants. Table 8 summarizes which of the cross-linguistically attested strategies are relevant for Jalonke, with the strategies occurring in the language given in boldface.

⁶ The distinction between direct vs. indirect and primary vs. secondary objects as first introduced by Dryer (1986) is now widely accepted (see Croft 1991). Dryer (1986) and Haspelmath (2001) reserve the terms for languages/constructions that treat the Recipient and Theme of a three-participant on a par with respect to case marking. This criterion corresponds to Austin, Evans & Margetts’s symmetry, and thus excludes languages that mark one Recipient or Theme as an oblique. Austin, Evans & Margetts use the term ‘secondary strategy’ in a different sense: they limit this notion to the grammatical relation the Theme of a three-participant bears in comparison to the Theme of a two-participant event. Independently of the case marking, they call it ‘secondary’ if it ends up in a different syntactic slot. Since, regardless of the object properties of the arguments in question, this distinction is important, I follow Austin, Evans & Margetts in splitting up the direct-indirect and primary-secondary object strategies into two parameters. One of these parameters contrasts ‘symmetry’ vs. ‘asymmetry’; the other ‘direct-indirect’ vs. ‘primary-secondary strategy’.

Table 8: Summary of cross-linguistically attested patterns for three-place verbs, with the patterns attested in Jalonke in boldface

Parameters	Strategies							
Case marking	direct	dative	oblique					
			allative	locative	ablative	benefactive (Theme-Beneficiary strategy)	instrumental (Theme-Instrument strategy)	genitive
Pivot properties	symmetrical				asymmetrical			
Linking patterns	parallel to transitive (Theme-Source/Goal strategy)				different to transitive (Source/Goal-Theme strategy)			

The linking patterns of Jalonke and their variations are introduced in detail in section 4.6.5.

4.6.4. POSTPOSITONS MARKING THE THIRD PARTICIPANT OF TRANSITIVE VERBS WITH OPTIONALLY THREE PARTICIPANTS

Three postpositions are involved in the marking the third participant of three-place verbs. Two of these postpositions – *ma* ‘at’ and *ra* ‘with’ – are, as the spatial postpositions of Jalonke in general, not specialized for the marking of Location, Path, Source, or Goal. Directional meaning components are lexicalized in verbs, not postpositions, as briefly illustrated in 2.7. *Be* ‘for’ is the only postposition that is not attested with spatial meanings – it exclusively marks Beneficiaries and occurs only with some verbs of transfer of information to mark the animate Goal/Beneficiary of a transfer of information. In the following, I will specify which specific Path relation, although determined by the directional semantics of the verb, not by the postposition, is marked, i.e. either Source or Goal. Moreover, I will avoid the term Recipient, a convenient role label for languages that make grammatical distinctions sensitive to the animacy vs. inanimacy of the Goal **and** sensitive to the coding of Sources vs. Goals (e.g. English *to* vs. *from*). Recipient is a misleading label for languages that make an animacy distinction but mark Sources and Goals indistinctly by the same adposition. This is the case of Jalonke, as examples (77) and (78) show, in which *ma* ‘at’ encodes the animate Source of *sara* ‘buy’, but the animate Goal of *matii* ‘sell’ respectively.

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

- (77) *N gatoo -na sara Hawa ma.*
 1SG cookie -DEF buy Hawa **at**
 ‘I bought a cookie **from** Hawa.’

- (78) *A tɔx -εε matii Aissatu ma.*
 3SG chicken -DEF sell Aissatu **at**
 ‘She sold a chicken **to** Aissatu.’

With these facts in mind, let us now turn to the three postpositions of relevance here. *Ma* is a spatial postposition with highly general semantics. Its semantic schematicity probably goes back to the lexical noun it originated from – most likely a noun meaning ‘place, location’. A cognate of Jalonke *ma*, *mă* ‘place’, is still attested in Bambara (Bailleul 1996). As a postposition⁷ *ma* indicates relations that correspond best to English ‘at’, although it does not signal a specific topological relation of a Figure with respect to a Ground, unlike English ‘at’. Synchronically, Jalonke *ma* is most probably simply a generic Ground-denoting postposition, used as a default whenever no specific Figure-Ground relation is described.

The extensions of *ma* include the encoding of certain abstract types of predicative possession in nonverbal predications construed as located in/at the possessor (79); location at a place with non-motion verbs (80); movement towards a Goal with certain motion verbs (81); and movement away from a Source for other motion verbs (82).

- (79) *Kaame- na nxo ma!*
 hunger -DEF 1PL.E **at**
 ‘We are hungry (lit.: Hunger **at** us)!’

Alpha2-157

- (80) *A wal -εε tand -εε ma.*
 3SG work -IPFV courtyard -DEF **at**
 ‘He is working **in** the courtyard.’

⁷ *Ma* is one of the most polyfunctional markers of Jalonke. Apart from its extensions as a postposition, it serves the following purposes: as a derivational verbal prefix it marks distributivity (see 2.8.3.2 and 7.4.1). As an inflectional verbal suffix, it expresses imperfective aspect (see 2.8.2.2.3). Finally, *ma* occurs as the marker signaling alienable possession in attributive possessive construction, as illustrated in 2.6.2. It is plausible that all these instances of *ma* are not cases of homophony, but diachronically related to the putative lexical noun ‘place’ grammaticalizing into the different target concepts.

CHAPTER 4

- (81) *I sig -aa xɔŋ -εε ma.*
 2SG go -IPFV stranger -DEF at
 ‘You are going **to** the stranger.’ Mburee 097

- (82) *On fan xa keli burun -na ma.*
 1PL.I also SUBJ leave bush -DEF at
 ‘We, too, should leave (lit.: **from**) the bush.’ Kiridina 234

The uses of *ma* most relevant for the present study are not those where it marks Ground-denoting phrases in adverbial function as in (81)-(82), but those where it marks the third participant of an event. To anticipate the detailed discussion of the different relations that *ma* marks in these cases, let us look at events of change of possession and consider which participants are encoded by *ma*. In analogy to its function as a head of Ground-denoting adjuncts in descriptions of locative relations and motion events, the postposition here simply functions as the indicator of a generic relation. As evident from examples (82)-(82) above, it is left to the verb to specify the nature and directionality of the change of possession event, for which I provisionally assume the same frame semantic roles as for ‘give’. Thus, in (83) *ma* serves to code the ‘giver’, in (84) to code the ‘receiver’ of a change of possession as the adjunct.

- (83) *N wulu sul -la roni -xi n baaba ma.*
 1SG thousand five -DEF inherit -PFV 1SG father at
 ‘I have inherited five thousand (Guinean Francs) **from** my father.’
- (84) *E faa bande -na ‘a, e a fii nxo ma.*
 3PL come food -DEF P 3PL 3SG give 1PL.E at
 ‘They came with food, they gave it **to** us.’ Alpha 018

Ma also occurs to mark the adjunct participant of some verbs of transfer of information. Thus in (85), it codes the ‘information’, while the ‘asker’ surfaces as the subject and the person ‘asked’ as the object:

- (85) *N e maxorin e a telefon- nymeroo -na ma.*
 1SG 2PL ask 3PL POSS phone number -DEF at
 ‘I asked them for their phone number.’ lettre 2-009

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

For other verbs of transfer of information, either the person ‘asked’ or the ‘information’ can appear in adjunct position, as in the case of *makula* ‘ask, beg’ in (86) and (87):

- (86) *O ji xax -aa makula n xunjaa -na ma.*
 2Pl DEM.PROX favor -DEF ask 1SG younger. -DEF at
 brother
 ‘You asked this favor from my younger brother.’ Kiridina 111

- (87) *Nxo ten o makula -xi naaxan ma...*
 1Pl.E EMPH 2Pl ask -PFV REL at
 ‘What we have asked you for...’ Xoro 045

Given that *ma* probably goes back to a locative noun *ma*, the finding that it not only marks Grounds in events of location and change of location, but also participants of events of change of possession and of transfer of information is best explained in terms of metaphorical extension. *Ma* started out as a Ground-denoting marker. Since it was vague with respect to encoding Location, Source or Goal, the specification of the presence and direction of the change of location was contributed by the verb. In a first metaphorical extension, change of possession was construed as similar to change of location, and *ma* marked ‘givers’ and ‘receivers’ of these event, although for a change of possession, no necessary change of location is entailed. In a second step of metaphorical extension, *ma* encoded the ‘person asked’ or the ‘information’ of some communication events, treating them in analogy to change of possession. For all three types of events, it can be argued that they entail at least a metaphorical transfer of an entity from a Source to a Goal, applying a metaphor I will henceforth label ‘transfer-metaphor’. In order to capture the common semantic frames of verbs following this metaphor, from now on I use the more general frame-semantic roles of ‘transferrer’ for the entity that initiates the transfer. ‘Good’ is used for the entity undergoing the transfer and ‘target’ for the endpoint of the transfer, whenever no concrete frame-semantic roles for individual verbs or groups of verbs are referred to. A systematization showing the event types instantiating the ‘transfer metaphor’ present with *ma*, their domain-specific frame-semantic roles and the generalization across these roles in bold face is presented in Table 9.

CHAPTER 4

Table 9: Semantic domain of events that instantiate the ‘transfer-metaphor’ (frame-semantic roles and generalization over frame-semantic roles)

Caused change of location	‘mover’	‘moved’	‘endpoint’
Change of possession	‘giver’	‘gift’	‘receiver’
Communication	‘person asked’ ‘teller’	‘information’ ‘information’	‘asker’ ‘told’
Generalization over the domain of transfer	‘transferer’	‘good’	‘target’

More difficult to assess is the use of *ma* to mark the adjunct participants of certain verbs of psychological states. Here, it can code either the ‘affectee’ (88) or the ‘affect’ (89) of that state (borrowing terms used by Jackendoff (1990:140) to describe the conceptual participants of psych-verbs):

- (88) *Xaran -na ‘afan an ma.*
 study -DEF be pleasant 1SG at
 ‘Studying is pleasant to me.’

- (89) *Kənɔ, maa, n xa tin a ma...*
 but, DISC 1SG SUBJ agree 3SG at
 ‘But, well, I should agree to it...’

Ataya 1186

On the basis of the available evidence, it is difficult to judge whether these verbs are construed as the ultimate extension of the ‘transfer-metaphor’, or whether the verbs denote a stative relation rather than having a deictic component. It is thus questionable which thematic roles the participants of these events are linked to. Moreover, verbs of psychological state and related semantic domains allow a wide variation with respect to the postposition heading the adjunct phrase. For these reasons, verbs of psychological state are not treated further in this study.

Ra ‘with’ is the second postposition involved in the marking of the third participant of verbs. As a postposition,⁸ *ra* marks class inclusion (90) and equation (91) in non-verbal predications. In predications optionally containing a verbal predicate it expresses certain kinds of locative relations, covering mostly those that can also

⁸ Like *ma*, *ra* also functions as a preverb in Jalonke (see 2.7.3.1 and 8.3.1). As such, it serves as a causative derivational prefix probably going back to the instrumental, which is, according to Song (1990), a widely attested source for the rise of causative markers.

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

be construed as part-whole relations, like the tree and its leaves in (92). In verbal predications, the functions of *ra* cover Comitative (93), Instrument (94) and Manner (95).

- (90) *Gine nan a ra.*
 woman FOC 3SG with
 ‘She is a woman.’

Jiba 016

- (91) *Manga -na a ra, ee!*
 king -DEF 3SG with DISC
 ‘He is the king, yeh!’

Jigijanna 153

- (92) *Burexe -nee mango -bil -la ‘a.*
 leaf -DEF.PL mango -tree -DEF with
 ‘The leaves are on the mango tree.’

- (93) *N faa ninge -nee ra.*
 1SG come cow -DEF.PL with
 ‘I came with the cattle. (=I brought the cattle.)’

Ibrahima1-004

- (94) *A lut -ee i- bolon siizoo -nee ra.*
 3SG rope -DEF IT cut scissor -DEF.PL with
 ‘He cut the rope with the scissors.’

Cut&Break-Alpha 024

- (95) *A goro -ma a firifiri ra.*
 3SG descend -IPFV 3SG spin with
 ‘He is descending spinning.’

Tomatoman-M 014

The merger of Comitative, Instrument and Manner into one ‘case marker’ makes Jalonke one further language that exhibits the widely attested, but not universal, syncretism of these roles (Croft 1991, Heine, Claudi & Hünemeyer 1991, Stolz 1996, *inter alia*).⁹ Here, I am mainly concerned with the use of *ra* ‘with’ to mark the adjunct participant of a three-place predicate as the Instrument of a transfer. *Ra*

⁹ These extensions correspond to those widely attested for comitatives (Heine & Kuteva 2002). Although (going back to Lakoff and Johnson’s (1980: 134f.) metaphor “An instrument is a companion”) a directional development of instruments into comitatives into manner adjuncts is often assumed, this directionality has not yet been confirmed unequivocally (Heine & Kuteva 2002). Hence, no directed grammaticalization chain is implied by the ordering of the meanings of *ra* in Jalonke.

CHAPTER 4

‘with’ is marginally used alternatively to *ma* ‘at’ to mark the ‘target’ of a transfer in the widest sense (96), but in most cases encodes its ‘good’, treating it as its Instrument (97).

- (96) *Nxo banta ji jita Maimuna ra.*
 1PL.E PF DEM.PROX show Maimuna with
 ‘We have (already) shown this to Maimuna.’ Diinaxu 005

- (97) *Aissatu n samba -xi bireeti -na ‘a.*
 Aissatu 1SG present.with -PF bread -DEF with
 ‘Aissatu has presented me with a bread.’ Ataya 180

Since this ‘good’ participant undergoes a change of location while serving as the Instrument, the ‘with’ phrase in English has been said to instantiate the ‘locatum argument’ (Clark & Clark 1979), a ‘displaced Theme’ (Rappaport & Levin 1988) or ‘with-Theme adjunct’ (Jackendoff 1990).¹⁰ By keeping frame-semantic and thematic roles apart, one can account for the ‘theme-like’ nature of the adjunct more elegantly, and at the same time capture that it actually is an Instrument, despite its additional change of location features. As noted by Goldberg (2002), the ‘with’-variant of the English Locative Alternation, whose linking patterns correspond to the Jalonke example in (97), is best characterized as a causative construction plus a ‘with’ adjunct. This ‘with’ adjunct encodes an entity that is manipulated by the Effector and as such is an Intermediary or Instrument in the causal chain. That it is understood as an entity undergoing a change of location does not follow from its being a Theme. Rather, this is a consequence of the lexical semantics of verbs that instantiate the transfer-frame, whose frame-semantics then specify a ‘good’ of a transfer, regardless of the thematic role(s) this ‘good’ can be linked to.

Be, the postposition encoding Beneficiaries, is more specialized than the other two postpositions examined so far. *Be* is used in verbless predications to mark predicative possession (98):

¹⁰ Note that for Rappaport & Levin (1988), the ‘with’ variant of the Locative Alternation would have two Themes: the one which is linked to object is a Theme of a change of state; the one which is linked to adjunct is a Theme of change of location. For Jackendoff, in contrast, there is no dual assignment of the Theme relation, because he differentiates between the thematic roles of participants undergoing a change of state (Patients) and participants undergoing a change of location (Themes).

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

- (98) *Xuli m' aa be.*
 tail NEG 3SG for
 'He (the chimpanzee) has no tail.'

Deemu 017

In combination with verbal predicates, *be* 'for' covers actions on somebody's behalf or for somebody's benefit or actions of intended transfer (to somebody's benefit). As such, its extension is roughly comparable to that of *for* in English (*Barbara baked a cake for me*):

- (99) *E band -εε jin -ma nxo be bui!*
 3PL food -DEF cook -IPFV 1PL.E for DISC
 'They are cooking food for us, woah!'

Alpha 016

- (100) *Nxo dubaa -xi i be.*
 1PL.E say blessings -PF 1SG for
 'We have said blessings for you.'

Farewell1 001

In combination with a verb encoding motion or direction, *be* cannot be used to encode the Source or Goal (with the exception of three verbs of transfer of information, discussed in 4.6.5.1).

Table 10 gives an overview of the main extensions of the three postpositions in nonverbal and verbal predications.

Table 10: Extensions of the postpositions *ma*, *ra* and *be*

Postposition	Nonverbal predication	Verbal predication	
		Non-directional verb	Directional verb
<i>ma</i>	Location		Source/Goal
<i>ra</i>	class inclusion equation some locative relations	Comitative Instrument Manner	
<i>be</i>	possession	Beneficiary (with some verbs of transfer of information: animate Goal/Beneficiary)	

To summarize, Jalonke employs three postpositions to mark the third participant of three-place verbs. *Ma* 'at' codes either the Source or the Goal of a change of loca-

tion, depending on the directional semantics of the verb governing it. It is likely that the development of *ma* ‘at’ in marking the animate Goals and Sources of change-of-possession-events is due to a metaphorical extension. In this extension, changes of possession are treated like changes of location (even though, as in the case of *roni* ‘inherit’, they do not always entail change of location). A further metaphorical extension most plausibly underlies the use of *ma* ‘at’ with verbs of communication – again, these events seem to be construed metaphorically like caused changes of location of information or ideas. *Ra* ‘with’ marks the participants of certain intransitive verbs of psychological state and the ‘goods’ of certain transitive verbs of transfer, most plausibly treating the former as Comitatives and the latter as Instruments of a transfer. *Be* ‘for’ is limited to select for Beneficiaries, with the exception of three verbs of transfer of information. The third participant of these verbs, which do not distinguish Goals and Beneficiaries, is marked by *be* ‘for’. It is probable that the earlier extension of *ma* ‘at’ to cover situations entailing transfer has so far preempted the often attested development of a benefactive marker into a dative or marker of all ‘indirect objects’ (Lehmann 1982b, Heine & Reh 1984, *inter alia*) in Jalonke. It has to be noted, however, that the verbs of transfer of information that encode their third participant in a PP headed by *be* ‘for’, might constitute a bridging context in the grammaticalization of benefactives into datives. Such a development is cross-linguistically common (Heine & Kuteva 2002). It is possible that the occurrence of *be* ‘for’ in these contexts reflects an ongoing grammaticalization process in the course of which it is taking over some of the functions of *ma* ‘at’.

4.6.5. PARTICIPANT STRUCTURE OF TRANSITIVE VERBS WITH OPTIONALLY THREE PARTICIPANTS

4.6.5.1. ‘THEME-SOURCE/GOAL STRATEGY’-ONLY VERBS

The ‘Theme-Source/Goal strategy’ treats the Theme of a three-participant event (102) and (103) in the same way as the Theme of a two-participant event (101):

(101)	<i>E</i>	<i>ning</i>	<i>-εε</i>	<i>faxa</i> .
	3PL	cow	-DEF	kill
	Effector	Theme		
	S	O		
	‘They killed a cow.’			

Jiba 142

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

- (102) ...*a xa ninge -nee fii n ma.*
 3SG SUBJ cow -DEF.PL give 1SG at
 Effector Theme animate Goal
 S O adjunct
 ‘They should give me a cow.’ Mburee 187

- (103) *Maa, e n xani Labe i, kasoo -n’ i.*
 DISC 3PL 1SG send Labe at prison -DEF at
 Effector Theme Goal
 S O adjunct
 ‘Well, they sent me to Labe, to prison.’ Alpha 2 166

The Source- and Goal-oriented verbs of transfer *sara* ‘buy (from)’ (77) and *matii* ‘sell (to)’ (78) follow the ‘Theme-Source/Goal strategy’ exclusively. Among the verbs that adopt this strategy as the only one are, however, a number of verbs that use a different postposition to mark the Source or Goal of the transfer. Thus, verbs that denote the transfer of a message or information, *jaabaa* ‘explain’ and *fala* ‘say, speak, tell’ only take the postposition *bε* ‘for’ (otherwise used to mark Beneficiaries only) to express Beneficiary and/or animate Goal:

- (104) *O a fala manga -nee bε,*
 2Pl 3SG speak king -DEF.Pl for
 ‘You tell (it) **to** your kings
- o faa ji sunkutun -na xɔn.*
 3SG come DEM.PROX girl -DEF at
 that we came because of this girl.’ Kiridiina 069

- (105) *A jaabaa n bε!*
 3SG explain 1SG for
 ‘Explain it **to/for** me!’

Other verbs of transfer, such as *sebe* ‘write’ or *sara* ‘buy’, differentiate between the marking of Beneficiaries and animate Goals or Sources. In (106), the participant encoded in the *bε*-phrase is a Beneficiary, and in (107), it is the animate Goal of writing a letter. In (108), the participant encoded in the *bε*-phrase can only be the Beneficiary, not the Source of buying, whereas in (109), it can only be the Source of the verb action.

CHAPTER 4

- (106) *N leter -na sebe n faafa be.*
 1SG letter -DEF write 1SG elder brother for
 ‘I wrote a letter **for** my elder brother (entails that I did it for his benefit or on his behalf, e.g. because he is illiterate).’

- (107) *N leter -na sebe n faafa ma.*
 1SG letter -DEF write 1SG elder brother at
 ‘I wrote a letter **to** my elder brother.’

- (108) *Siga den, i ser -εε sara ji be.*
 go DISC 2SG medicament -DEF buy DEM.PROX for
 ‘Go, you buy medication **for** this one!’ Ibrahima1 147

- (109) *N gatoo -na sara Hawa ma.*
 1SG biscuit -DEF buy Hawa at
 ‘I bought biscuits **from** Hawa.’

Another verb of transfer of information, *kɔʒekɔʒe* ‘whisper’, discussed further in 4.6.5.4 below, also appears in the ‘Theme-Source/Goal strategy’ when its third participant appears in a PP headed by *be* ‘for’. Many verbs distinguish between animate Goal and Beneficiary through the use of different postpositions. It is probable that verbs of transfer of information behave differently, because in the case of information transfer, the two situation types never contrast in Jalonke – the animate Goal may be viewed as the Beneficiary and vice versa. In contrast to the other transfer verbs, they are not used to describe actions performed on behalf of or for the benefit of a third person that is not the animate Goal.¹¹

The Jalonke verbs explored so far are specialized for transfer to or from human entities, roughly corresponding to situations of transfer to animate Goals expressed by the ‘double-object’ construction of English (*I sent Zara the quotes*). In contrast to English, though, these verbs cannot appear in an equivalent to the English Dative Alternation (*Loretta sent the application to London*) used for inanimate

¹¹ Other verbs marginally occur with postpositions other than *ma*, *ra* and *be*. *Matii* ‘sell’ is attested with *ma* and with *xɔn* ‘at’ to mark the animate Goal. *jita* ‘show’ is the only verb employing the postposition *ra* ‘with’ (96) without following the ‘Theme-Instrument strategy’ – it is the Theme that turns up as the object, the animate Goal as the adjunct, quite differently from the ‘Theme-Instrument’ verbs introduced in 4.6.5.3. Since *ra* and *xɔn* as Source/Goal markers for transfer verbs are only attested marginally, I treat these cases as idiosyncratic.

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

Goals.¹² Rather, two different verbs, *xani* ‘send’ and *xεε* ‘send, commission’ exclusively designate transfer to inanimate Goals. Thus, unlike in English, verbs and not constructions are specialized for the different kinds of transfer to animate vs. inanimate Goals. The locative postposition used with the two verbs *xεε* ‘send, commission’ and *xani* ‘send’, varies according to the type of Goal referent – *i* ‘at’ in the case of toponyms (110), *ra* ‘with’ (111) in the case of body parts as Goals, and *ma* ‘at’ (112) with most other types of referents functioning as inanimate Goal.

- (110) *E e tongo, e e xani Kute i.*
 3Pl 3Pl take 3Pl 3Pl send Kute at
 ‘They took him, they sent him to Kute.’ Jalonke 031

- (111) *Alla i a wal -εε xani jaare -na ‘a!*
 Allah 2SG POSS work -DEF send front -DEF with
 ‘May Allah make progress your work (lit.: sent it to the front).’ lettre-1 043

- (112) *A a tongo, a a xani wulaa -na ma*
 3SG 3SG take 3SG 3SG send forest -DEF at
 ‘They took him, they sent him to the forest.’ Kweelenna 051

Two verbs of transfer, *sara* ‘buy’ and *matii* ‘sell’ entail the exchange of money in their frame semantics. They can have the ‘price’ of that exchange as a zero-marked adjunct (113), but Goal/Source **and** price never occur in one clause.

- (113) *A band -εε sara keme naani.*
 3SG food -DEF buy hundred four
 ‘She bought food for four hundred (Guinean Francs).’ Labe 027

Thus, Jalonke follows the cross-linguistic generalization (Austin, Evans & Margetts, in prep.) that a maximum of three overt arguments may be expressed by a simplex verb in a single clause, even though more participants might said to be present semantically.

¹² Although there are morphological and phonological restrictions on the distribution of the dative alternation in English (i.e. verbs of Latinate origin do not allow the double object construction), it is generally agreed (Levin 1993, Goldberg 1995, inter alia) that along with criteria of information structure, animacy features play a role for the dative alternation: verbs in the double object construction pose an animacy restriction on their Goal phrase.

CHAPTER 4

Table 11: All ‘Theme-Source/Goal strategy’-only verbs of transfer in Jalonke

<i>fala be</i>	‘tell, speak to, say to’
<i>fii ma</i>	‘give to’
<i>jaabaa be</i>	‘explain to/for’
<i>jita ra</i>	‘show to’
<i>luxun ma</i>	‘hide from’
<i>ma-tii xɔn/ma</i>	‘sell to’ (lit.: DISTR-stand (up))’
<i>sara ma</i>	‘buy from’
<i>xεε ma/ra/xɔn/i</i>	‘send, commission’
<i>xani ma/ra/xɔn/i</i>	‘send’

4.6.5.2. ‘SOURCE/GOAL-THEME STRATEGY’-ONLY VERBS

In the ‘Source/Goal-Theme strategy’, the grammatical relation of the Theme in the three-place predicate (115), is different from the one of the Theme of a transitive verb (114):

(114)	<i>E</i>	<i>sii</i>	<i>-na</i>	<i>bura</i>	<i>-a.</i>	
	3PL	goat	-DEF	skin	-IPFV	
	Effector	Theme				
	S	O				
	‘They are skinning a goat.’					Baptism 007

(115)	<i>N</i>	<i>e</i>	<i>maxorin</i>	<i>ε</i>	<i>ε</i>	<i>telefon-</i>	<i>nymeroo</i>	<i>-na</i>	<i>ma.</i>
	1SG	3PL	ask	3PL	POSS	phone	-number	-DEF	at
	Effector/	Goal				Theme			
	Source								
	S	O				adjunct			
	‘I asked them for their phone number.’								lettre 2-009

Transfer verbs employing only the ‘Source/Goal-Theme strategy’ seem to lexically profile the animate Goal/Source as more affected or salient than the Theme, hence its linking to direct object.¹³

¹³ Note that an alternative approach to this linking strategy would be to postulate a difference in thematic roles that results in a syntactic alignment different from that of transitive verbs and from verbs following the Theme-Source/Goal strategy. Thus, one might want to consider the argument linked to object as the Theme, not as the animate Source/Goal (or Recipient). It is unclear, however, what the thematic role of the third participant would be on that account – *ma* ‘at’ does not mark Instruments in Jalonke, so unless one wants to stipulate idiosyncratic Instrument marking for a small group of verbs,

Table 12: All ‘Source/Goal-Theme strategy’-only verbs of transfer in Jalonke

<i>kanta ma</i>	‘protect from, save from’
<i>kisi ma</i>	‘protect from, save from’
<i>niga ma</i>	‘learn to, teach to’
<i>ra-sii ma</i>	‘advise, counsel (lit.: CAUS-sow)’

4.6.5.3. ‘THEME-INSTRUMENT STRATEGY’-ONLY VERBS

The third strategy attested for Jalonke associates the ‘target’ of a transfer with the Theme, and the ‘good’ with the Instrument affecting the Theme. This strategy resembles the ‘Source/Goal-Theme strategy’ with respect to the frame semantic role that is linked to object: it is the ‘target’. Nevertheless, the ‘Theme-Instrument strategy’ and the ‘Source/Goal-Theme strategy’ differ in that the former exhibits consistency in syntactic profiling across two- (116) and three-place predicates (117):

- (116) *Nxo band -εε nin.*
 1PL.E food -DEF cook
 Effector Theme
 S O
 ‘We cooked food.’ Labe 042

- (117) *Aissatu n samba -xi bireeti -na ‘a.*
 Aissatou 1SG present -PFV bread -DEF with
 Effector Theme Instrument
 S O adjunct
 ‘Aissatu has presented me with a bread.’ Ataya 180

The two transfer verbs of Jalonke that treat the ‘target’ of a transfer as the entity affected by the ‘good’ as the Instrument of that transfer, i.e. as the Theme, have both the sense of ‘present somebody with something’. The difference between the two verbs of presenting is that *samba*, but not *kii*, necessarily entails a previous displacement of the ‘giver’ – he either came to visit or returned from a trip with a

this possibility is ruled out. Since a well accepted way to analyze this strategy is to admit that the participant structure of these verbs involves the thematic roles of Theme and animate Goal/Source just as for Theme-Source/Goal verbs, but that their linking properties differ (Dryer 1986), I follow this analysis.

CHAPTER 4

gift. Whether *ratuu* ‘remind’, the third verb instantiating this strategy exclusively, also follows the ‘transfer metaphor’ must left be open for the moment.

Table 13: All ‘Theme-Instrument strategy’-only verbs of transfer in Jalonke

<i>kii ra</i>	‘present with, bestow with’
<i>ra-tuu ra</i>	‘remind of (lit.: CAUS-die)’
<i>samba ra</i>	‘present with (after displacement of giver)’

4.6.5.4. ALTERNATIONS

If verbs alternate between strategies, they mainly fluctuate between the ‘Theme-Source/Goal and the ‘Source/Goal-Theme’ strategies. Examples for the alternations are given for *kɔʒɛkɔʒɛ* ‘whisper’ below. *Kɔʒɛkɔʒɛ* does not distinguish the marking of Beneficiary/animate Goal in the ‘Theme-Source/Goal strategy’.

- (118) *N gund -ɔɔ kɔʒɛkɔʒɛ Haamidu bɛ.*
 1SG secret -DEF whisper Haamidu for
 ‘I whispered a secret **to** Haamidu.’

- (119) *N Haamidu kɔʒɛkɔʒɛ gund -ɔɔ ma.*
 1SG Haamidu whisper secret -DEF at
 ‘I whispered Haamidu a secret (lit.: I whispered Haamidu at a secret).’

Table 14: All verbs of transfer that alternate between the ‘Theme-Source/Goal and the ‘Source/Goal-Theme’ strategies in Jalonke

<i>doni ma</i>	‘lend, borrow (money)’
<i>kɔʒɛkɔʒɛ bɛ/ma</i>	‘whisper’
<i>ma-kula ma</i>	‘beg’ (DISTR only)
<i>ma-xorin ma</i>	‘ask’ (DISTR only)
<i>muga ma</i>	‘steal’
<i>roni ma</i>	‘inherit’

With respect to the linear order of participants, this alternation is equivalent to the English Dative Alternation that has received much linguistic attention. Although it is impossible to examine the wealth of statements on the semantic and pragmatic conditions of the alternation and to test whether they hold for Jalonke, too, some convergences and divergences can be pointed out. While many Jalonke verbs with animate Goals or Sources do not participate in the alternation, no verb with an inanimate Source/Goal does. Further, verbs specialized for transfer to or from inani-

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

mate Goals or Source (*xεε* ‘send, commission’ and *xani* ‘send’) do not appear in the ‘Source/Goal-Theme strategy’ at all. This finding puts Jalonke on a par with English with respect to the animacy restriction on the ‘double-object’ variant of the Dative Alternation. Other observations made for English are not applicable to Jalonke: for instance, Levin & Rappaport Hovav (2003) notice in accordance with Bresnan & Nikitina (ms.) that, where no information structure and heaviness criteria overrule the choice, the alternants are distinguished by semantic properties of the Goal. If the Goal is animate **and** a kind of possessor, they state, it should enter the ‘double-object’ alternant. If it is a purely spatial Goal, but also if it is **not** a type of possessor, it should be expressed in the ‘to-variant’ of the alternation only. This finding is not paralleled by Jalonke: verbs such as *kanta* ‘protect from’ and *kisi* ‘protect from’ instantiate the ‘Source/Goal-Theme strategy’. This strategy is reminiscent of the ‘double object’, not of the prepositional variant of English, although the adjunct clearly is not the resultant possessor of the transferred entity.

Only one verb, *nefu* ‘lend’ is attested to alternate between the ‘Theme-Source/Goal and the ‘Theme-Instrument’ strategies. Its different configurations are exemplified below:

- (120) *N bik -ɔɔ nefu Mariama ma.*
 1SG pen -DEF lend Mariama at
 ‘I lent a pen **to** Mariama.’

- (121) *N Mariama nefu biku -na ‘a.*
 1SG Mariama lend pen -DEF with
 ‘I lent Mariama a pen (lit.: I lent Mariama **with** a pen).’

The ‘Theme-Instrument strategy’ of Jalonke is reminiscent of the English ‘Locative Alternation’ (*Jürgen loaded boxes into the car* vs. *Jürgen loaded the car with boxes*). For this alternation, it is most plausible, but remains to be tested, that it reflects a difference in affectedness, the ‘target’ being more holistically affected in the with-variant than in the to-variant (Levin 1993). In English, the alternants have different entailments – the ‘with’-alternant entails the locative alternant, but not vice-versa, (Levin & Rappaport Hovav 2003, *inter alia*). Whether this difference in entailments also holds for Jalonke is impossible to judge on the basis of the evidence I collected in the field.

CHAPTER 4

Table 15: The one transfer verb that occurs in both the ‘Theme-Source/Goal’ and ‘Theme-Instrument’ strategies in Jalonke

<i>jefu ma/ra</i>	‘borrow, lend’
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Verbs that oscillate between the ‘Source/Goal-Theme’ and ‘Theme-Instrument’ strategies are equally marginal in Jalonke – again, only one verb is known to have this behavior:

- (122) *A n tɔɔɲin -xi nde mug -aa ma.*
 3SG 1SG accuse -PFV DIST theft -DEF at
 ‘He had accused me **of** theft.’

- (123) *A n tɔɔɲin -xi nde muga -na ‘a.*
 3SG 1SG accuse -PFV DIST theft -DEF with
 ‘He had accused me of theft (lit.: **with** theft).’

Table 16: The one transfer verb that occurs in both the ‘Source/Goal-Theme’ and ‘Theme-Instrument’ strategies in Jalonke

<i>tɔɔɲin ma/ra</i>	‘accuse’
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Table 17 summarizes the main alignment patterns for the participants of three-participant events, limited to the most productive patterns.

Table 17: Participant marking and postpositions for the different strategies

Strategy	Role mapped to Subject	Role mapped to direct object	Role mapped to adjunct	Postposition marking adjunct
‘Theme-Source/Goal strategy’	Effector	Theme	(Animate) Goal	<i>ma</i>
	Effector	Theme	(Animate) Source	
‘Source/Goal-Theme strategy’	Effector	(Animate) Goal	Theme	<i>ma</i>
	Effector	(Animate) Source	Theme	
‘Theme-Instrument strategy’	Effector	Theme	Instrument	<i>ra</i>

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

Strategy	Role mapped to Subject	Role mapped to direct object	Role mapped to adjunct	Postposition marking ad- junct
‘Theme- Beneficiary strategy’	Effector	Theme	Beneficiary	<i>bε</i>

While there are a number of verbs that instantiate one strategy exclusively, several verbs appear either in both the ‘Theme-Source/Goal and ‘Source/Goal-Theme’ strategies or in both the ‘Source/Goal-Theme’ and ‘Theme-Instrument’ strategies. No verb so far is attested with all three strategies. Very plausibly, this limitation in variation is motivated by conflicting semantic and pragmatic principles of information structure:

The DO/IO [direct object/indirect object] distinction follows semantic roles more closely: the DO of either a monotransitive or a ditransitive clause is prototypically a patient/theme, while the IO is a recipient/beneficiary. The PO/SO [primary object/secondary object] distinction, in contrast, is linked more closely to discourse/pragmatic function. In ditransitive clauses, the IO tends to be more ‘topical’ than the DO, since the IO is generally human and definite, and often 1st or 2nd person; the DO is generally non-human and indefinite, and almost invariably 3rd person. (Dryer 1986: 841)

Verbs that only follow a single strategy lexically either adopt a regular linking pattern **or** respond to topicality features. Verbs adopting two strategies can choose between the two features, but the ‘Source/Goal-Theme strategy’ and the ‘Theme-Instrument strategy’ are similar with respect to having the ‘notional indirect object’ (in Dryer’s terms) or ‘target’ (in frame-semantic terms) in direct object position, even though they treat it once as an animate Goal and once as a Theme. Thus, they differ less crucially to each other than in contrast to the ‘Theme-Source/Goal strategy’. The ‘Source/Goal-Theme’ and the ‘Theme-Instrument’ strategies can thus be viewed as two variations of a strategy that functions in terms of topicality. Both are opposed to the ‘Theme-Source/Goal strategy’ that operates in terms of consistency of linking across two- and three-participant events.

It has to be stated, however, that based on my present knowledge of Jalonke, it is impossible to judge whether the alternations listed in this section constitute morphosyntactic or morpholexical operations. This is due to the following reasons:

even for well-studied alternations like the English dative alternation, principles of information structure such as ‘heaviness’ of the constituent NPs are known to influence the admissibility of its variants. The influence of these and other criteria on the syntactic realization of three-place verbs is impossible to assess based on elicitation alone, and cannot be estimated from a small, field-based corpus which is severely restricted in its informativeness through the fact that the verbs in question appear with only two participants in the majority of cases. Therefore, the exact levels of grammatical information relevant for the alternations cannot ultimately be stated here.

4.7. SUMMARY

This chapter has presumed that transitive verbs in Jalonke denote externally caused eventualities (4.2). In accordance with their causation type, these verbs have an Effector who instigates a causing subevent and a Theme that undergoes a change of state or location and does not actively participate in the change. Their causativization patterns (cf. 7.3.1.3), differing from other causation types, and the obligatory passive interpretation (entailing an Effector external to the caused subevent) of the intransitive uses of these verbs (cf. 7.3.2) reinforce this external cause analysis. Sections 4.3 to 4.5 have introduced the three subclasses of transitive verbs – verbs of manner of motion and contact, verbs specifying manner and result of a change of state, and verbs only containing an unspecified causing subevent and a subevent of change of state.

Section 4.6 has been concerned with three-place predicates. In view of the limited evidence for argumenthood of their third participant (4.6.1), three-place predicates have not been treated as a special class, but as a subgroup of transitive verbs. Section 4.6.2 has explored the different options of Jalonke verbs for the lexical profiling of their frame-semantic roles, identifying two different patterns of associating semantic frames with thematic roles. The cross-linguistically common patterns for thematic role assignment and linking of the second and third participants of these verbs, of their grammatical status and of possible alternations have been introduced in 4.6.3. Three postpositions have been identified as relevant in the marking of the third participant of these verbs in 4.6.4. In section 4.6.5, the inventory of strategies attested in Jalonke and possible alternations between them has been given. In addition, motivations for their argument structures in terms of the semantics of the Goal participant, of syntactic consistency for the marking of grammatical relations across two- and three-participant events, and of information structure considera-

LEXICAL ARGUMENT STRUCTURE – TRANSITIVE VERBS

tions have been proposed. Parallels to well-studied English lexicalization and alternation patterns have been drawn where possible.

This chapter has further contributed towards establishing that causation types are coextensive to some extent with argument structure classes by supplying evidence that shows that the class of transitive verbs is exclusively determined through the feature external cause. The chapter has further revealed that cross-linguistic expectations on the event structure types in this class need to be refined, since there is a class of non-alternating verbs of pure change of state or result verbs in Jalonke. The chapter has also presented important data for a typology of three-place verbs and the parameters that underlie the variation in linking for their second and third participant.

The following chapter looks at a class of verbs that allows both transitive and intransitive (passive and non-passive) readings. This class is the one of causative/inchoative alternating verbs.

LEXICAL ARGUMENT STRUCTURE – CAUSATIVE/INCHOATIVE VERBS

CHAPTER 5

5.1. INTRODUCTION

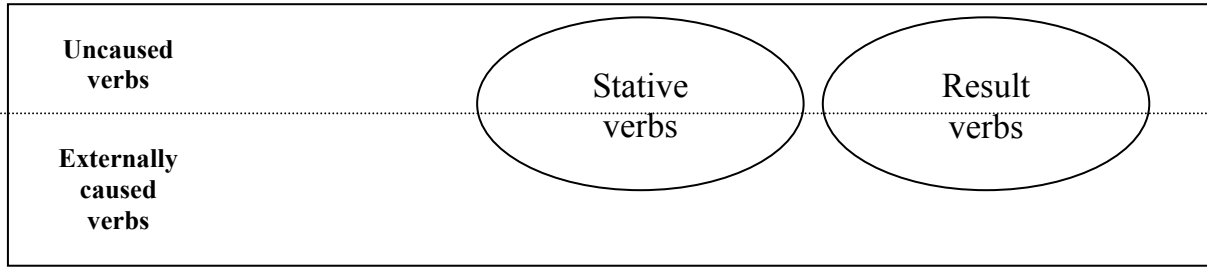
This chapter looks at the causative/inchoative alternating verbs of Jalonke. Causative/inchoative alternating verbs are not very numerous: at present, only 23 verbs participating in this alternation are attested in the Jalonke lexicon. The following properties are crucial for this verb class:

- (i) The verbs alternate between intransitive inchoative and causative transitive readings.
- (ii) Their intransitive use is ambiguous between intransitive active and transitive passive readings.

Section 5.2 is concerned with the two argument structure options for these verbs, what motivates them, and how the ambiguity for their intransitive uses can be resolved through semantic tests. In 5.3, those alternating verbs that have stative and state change readings are treated. Section 5.4 is concerned with the verbs that only encode changes of state or location and are thus classified as result verbs. As for the other lexical argument structure chapters, subsections are dedicated to the discussion of the verbs' event structure, lexical aspect and participant structure and to an overview of members of the respective classes. A summary (5.5) ends the chapter.

Figure 1 illustrates the causation and temporal event structure classes attested for causative/inchoative alternating verbs.

Figure 1: Temporal event structure classes for causative/inchoative alternating verbs and their causation types



5.2. CAUSATIVE/INCHOATIVE ALTERNATING VERBS AS DENOTING EXTERNALLY CAUSED AND UNCAUSED EVENTS

Causative/inchoative verbs like *bira* ‘fall’ alternate between a transitive externally caused argument structure as in (1) and an intransitive argument structure in which the corresponding event is construed as occurring spontaneously, without an overt external cause argument as in (2).

- (1) *Na ten, a dɔk -εε bira*
 DEM.DIST EMPH 3SG stick -DEF **fall**
 ‘That one, he **dropped** the stick,

see -dii burexe -kan -na ma.
 thing -DIM leaf -type -DEF at
 on the small green thing.’

ECOM-lo AB E07

- (2) *...a dɔk -εε bepi, dɔk -εε bira*
 3SG stick -DEF release stick -DEF **fall**
 ‘...he released the stick, the stick **fell/was dropped**

see -dii burexe -kan -na ma.
 thing -DIM leaf -type -DEF at
 on the small green thing.’

ECOM-lo AB E07

As will be argued in detail in chapter 8, there is evidence to regard the intransitive uses of most of these verbs with an inchoative reading as unaccusative. The difference between the intransitive and transitive uses of these verbs doesn’t lie in the presence of an external cause for their transitive alternant and in the absence of an external cause for their intransitive alternant. Rather, the alternants are distin-

LEXICAL ARGUMENT STRUCTURE – CAUSATIVE/INCHOATIVE VERBS

guished through the **construal** of the corresponding event. This becomes evident from the fact that the causative alternant of *bira* ‘fall’ in (1) and its inchoative alternant in (2) refer to the same real-world situation: a video clip featuring a blue shape pushing a red ball, which holds a stick in its mouth and drops the stick on a green triangle. The event described in (2) is thus not really uncaused – it is merely described as not externally caused, hence uncaused, focusing on the result state of a change of state, and not on its causing subevent.

The transitive alternant of a causative/inchoative verb like *bira* ‘fall’ is lexically causative, as illustrated by (1) above and (3) below.

- (3) ... *saagiran* -*na* *nun* *lanseti* -*na*,
 needle -DEF and razor -DEF
 ‘...the needle and the razor,

 i *a* ***bira*** *kiiraa* -*na* *xɔn*
 2SG 3SG **fall** way DEF at
 ‘you **drop** them on the way...’

Maamadiina 078

The intransitive use of these verbs, as in (2) above, is ambiguous. Their intransitive use can be interpreted as the passive of the causative reading, entailing a semantically present but syntactically unexpressed external cause, as in (4), or it can be interpreted as inchoative or uncaused (5). The difference between the two readings can only be revealed by passive tests (introduced in 1.8.4.8) like the question ‘Did somebody *verb* X?’ the answers to which are given in brackets after the ambiguous clauses.

- (4) *Dii* -*dii* -*na* ***bira***. (*Muxi* *nda* *a* *bira*.
 child -DIM -DEF **fall** person some 3SG fall
 ‘The small child **was dropped**. (Somebody dropped it.

 A *mun* *bira* *a* *kan* *tagi*.)
 3SG NEG fall 3SG owner middle
 It didn’t fall by itself.)’

 (5) *Dii* -*dii* -*na* ***bira***. (*Muxi* *oo* *m’* *aa* *bira*.
 child -DIM -DEF **fall** person whoever NEG 3SG fall
 ‘The small child **fell**. (Nobody dropped it,

CHAPTER 5

A bira a kan tagi.)
 3SG fall 3SG owner middle
 it fell by itself.)’

This possibility of two different readings, which is always present for intransitive alternants of causative/inchoative verbs, is not tied to differences in the event structure. It partially depends on features determined at the level of participant structure and partially on pragmatic inferencing and real-world knowledge, as demonstrated in detail on the example of posture verbs in 5.4.3. The interpretation of intransitive clauses featuring causative/inchoative alternating verbs distinguishes these verbs from both transitive and intransitive verbs - transitive-only verbs obligatorily receive a passive interpretation in intransitive clauses, and intransitive-only verbs always receive an active interpretation in these clauses. Only the class of causative/inchoative verbs allows both a passive and an inchoative interpretation in intransitive clauses. This ambiguity is not surprising, as stated by Haspelmath:

The inchoative member of an inchoative/causative verb pair is semantically similar to the passive of the causative (the stick was broken), but it crucially differs from it in that the agent is not just unexpressed; rather, the situation is conceived as of occurring without an agent, spontaneously. This does not mean that there cannot be an agent in the objective situation. (Haspelmath 1993: 90)

For the causative/inchoative alternating verbs, the different behavior of the alternants in combination with the morphological causative strengthens the assumption of two different readings. If these verbs appear in a transitive clause, unmediated causation is entailed, as in example (3) above. If a causative/inchoative verb appears with causative marker *ra-*, two patterns are attested, as illustrated by (6) and (7).

- (6) *N Adama ra- bira biku -na ‘a.*
 1SG Adama CAUS- fall pen -DEF with
 ‘I made Adama drop the pen.’

LEXICAL ARGUMENT STRUCTURE – CAUSATIVE/INCHOATIVE VERBS

- (7) *E a dεε -xab -εε suxu,*
 3PL 3SG mouth -straw -DEF seize
 ‘They seized his beard,

e a ra- bira jee -na xɔrɛra.
 3PL 3SG CAUS- fall water -DEF in
 they **made** him **fall** into the water.’

Forotonee 012

In (6), an expanded transitive clause is the result of morphological causativization; the *ra*-phrase is an argument that can not be substituted by e.g. a locative PP or dropped (see 7.3.1.3 for a detailed discussion). In (7), a transitive clause with an adjunct is the output. These differences in valence of the verb in combination with the causative marker can be most convincingly explained if we admit the transitive alternant as the input for the morphological causative in (6), and the intransitive alternant as its input in (7). In both cases, the valence of the clause is then increased by one, yielding an expanded transitive and a transitive clause respectively. The expanded transitive clause as in (6) patterns with the valence increase that base transitive verbs undergo in combination with the morphological causative. The transitive clause as in (7) patterns with the valence increase observed for base intransitive verbs when morphologically causativized, as demonstrated in detail in 7.3.1.2. In view of this double argument structure, I classify causative/inchoative alternating verbs as polysemous, that is, as combining two lexical units in one lexeme (Cruse 1986: 49-50).

It is difficult to decide in which direction the causative/inchoative alternation works. Haspelmath (1993) regards it as non-directed, because markedness relations do not reveal one of the alternants as basic and the other one as derived. Levin & Rappaport Hovav (1995) assume the causative use of alternating verbs as basic, and the inchoative use as being derived from it. The evidence they cite in favor of a basic causative reading is the following: first, they argue, the causative reading shows a greater semantic generality with respect to the possible referents of the subject argument than the inchoative reading. Secondly, they extrapolate from cross-linguistic marking patterns for verbs of this class: if languages use morphologically related rather than alternating verb forms, the inchoative form for verbs like *break* tends to be derived from the causative one – for verbs that are not externally caused, such as *laugh*, cross-linguistically, the transitive form tends to be derived from the intransitive one. Moreover, Rappaport Hovav & Levin (1998) claim that there is no possibility of adding a causing subevent to a simple change of state

CHAPTER 5

template. There is only the possibility of binding the external cause element of complex change of state templates if, and only if, these templates do not specify the manner of the causing subevent. There seems to be no convincing reason, nevertheless, to exclude a template augmentation that works in the opposite direction and creates causative alternants through the addition of a causing subevent, as proposed by Van Valin & LaPolla (1997). I adopt Haspelmath's (1993) way of viewing the alternation as non-directed. Moreover, I follow Haspelmath in considering that the marking pattern for causative/inchoative verb pairs as derived or alternating depends on a combination of several independent parameters. These parameters comprise the orientation of individual languages towards fundamental transitivity vs. fundamental intransitivity (Nichols 1981, 1982, 1993, Nichols *et al* 1999) as well as semantic construals of causation types for individual verbs. As already addressed in 1.7.2.2, there is a certain leeway for events such as breaking or melting as being construed as externally caused or uncaused. The language-particular tendencies for verbs denoting these events to be transitive, intransitive, or causative/inchoative might be said to partly depend on the force of gravity of intransitive verbs or transitive verbs as the preferred simplex lexicalization pattern in a language.

For Jalonke, there is nevertheless some evidence to regard the causative reading of causative/inchoative alternating verbs as basic. The addition of an external cause argument is always morphologically marked in the language (7.3), whereas the suppression of an external cause argument, be it through the passive or inchoative alternation, isn't. This fits with the general inclination of Jalonke towards 'fundamental transitivity' (Nichols 1981, 1982, 1993, Nichols *et al* 1999). Jalonke has a greater number of transitive verb roots than intransitive ones. In terms of valence-changing mechanisms, the language has the cross-linguistically most common inventory (Nichols 1992) of a valence-decreasing passive and a valence-increasing causative. In that respect, Jalonke is balanced between taking transitive verbs as the input for valence-changing operations – as expected for a typical fundamentally transitive language – or as taking intransitive verbs as their input – as is the norm for fundamentally intransitive languages. Moreover, the intransitive use of causative/inchoative alternating verbs is always ambiguous between an uncaused reading and a passive reading, as illustrated above. Yet ambiguity for intransitive uses of causative/inchoative alternating verbs just further signals their position as intermediate between event descriptions that are always viewed as internally caused or uncaused, and consequently realized in intransitive verbs, and event descriptions that are always viewed as externally caused, even in intransitive uses, where a passive

LEXICAL ARGUMENT STRUCTURE – CAUSATIVE/INCHOATIVE VERBS

interpretation is entailed. Therefore, I do not commit myself to a possible direction of the alternation and simply classify the verbs in question in terms of the alternation in which they occur.

Some causative/inchoative alternating verbs can have stative as well as state change readings. These verbs are not very numerous and comprise a number of ‘degree achievements’, such as *fura* ‘be hot’ or *tilin* ‘be deep’. (Recall that for the sake of simplicity, in the glosses, only the stative translational equivalent of these verbs is given.)

The remaining causative/inchoative alternating verbs all encode changes of state or location. They comprise the posture verbs *tii* ‘stand (up)’, *saa* ‘lie (down)’ and *dɔxɔ* ‘sit (down)’, some phasal verbs, as *fɔlɔ* ‘begin, start’, and some other pure verbs of change of state or result verbs, such as *gira* ‘break, crush’, and of change of location, such as *soo* ‘enter’.

5.3. CAUSATIVE/INCHOATIVE ALTERNATING RESULT VERBS WITH STATIVE READINGS

5.3.1. MEMBERS OF THE CLASS OF CAUSATIVE/INCHOATIVE ALTERNATING RESULT VERBS WITH STATIVE READINGS

The verbs in this subclass are only a handful. Their inventory is given in Table 1.

Table 1: All causative/inchoative alternating verbs with intransitive stative readings in the Jalonke lexicon

<i>fiixɛ</i>	‘be white, clean’
<i>fɔɔrɔ</i>	‘be black’
<i>fura</i>	‘be hot’
<i>tilin</i>	‘be deep’
<i>xɔnɔ</i>	‘hurt’

5.3.2. EVENT STRUCTURE AND LEXICAL ASPECT OF CAUSATIVE/INCHOATIVE ALTERNATING RESULT VERBS WITH STATIVE READINGS

A number of causative/inchoative alternating verbs allow intransitive readings which, if not interpreted as a passive of the causative alternant, are stative and inchoative. These verbs are thus equivalent in their aspectual interpretation to the in-

CHAPTER 5

transitive stative verbs with optional state-change readings treated in 3.5. This equivalence is illustrated in the following paragraphs.

When used intransitively and not interpreted as passives of their transitive alternant, the verbs of this subclass receive an imperfective interpretation (8), as attested for their intransitive counterparts,. This temporal interpretation distinguishes them from dynamic verbs, for which the zero-marked form triggers past time reference (see 1.8.4.1 for a discussion of the default-aspect test).

- (8) *A bɔŋ -εε fiixε.*
 3SG liver -DEF be white
 ‘She is goodhearted (lit.: Her heart is white.)’Ataya 185

Just as with intransitive stative verbs, these verbs are compatible with state change semantics under certain circumstances. This compatibility is illustrated through the admissibility of the imperfective in (9), of the *a i* construction in (10), and of the perfect in (11):

- (9) *Jee -na fur -aa.*
 water -DEF be hot -IPFV
 ‘The water is getting hot.’
 ‘The water is being heated.’

- (10) *Jee -na fura a i de!*
 water -DEF be hot 3SG at DISC
 ‘The water has become really hot!’
 ‘The water has been really heated!’

A nun mun fura, kɔnɔ xɔri, a fura.
 3SG PAST NEG be hot but now 3SG be hot
 It wasn’t hot, but now it is hot.’
 It wasn’t heated, but now it was heated.’

- (11) *Jee -na fura -xi.*
 water -DEF be hot -PF
 ‘The water is hot.’
 ‘The water has been heated.’

LEXICAL ARGUMENT STRUCTURE – CAUSATIVE/INCHOATIVE VERBS

For the transitive alternants of these verbs, a change of state is always entailed. This becomes obvious through the result of the specification-completion test (introduced in 1.8.4.4) for (12):

- (12) *A dugi -nee fiixε ler keden nan kwi*
 3SG cloth -DEF.PL be white hour one FOC in
 ‘She cleaned (lit.: whitened) the clothes in one hour.’

The test reveals that before the completion of the indicated time interval, the event denoted by the verb cannot be viewed as completed:

- (13) *A tagi -n’ ii, a e fiix -εε.*
 3SG middle -DEF at 3SG 3PL be white -IPFV
 ‘In the middle of it, she is cleaning them.’

At the same time, most verbs in this subclass have no discrete end state and thus correspond to ‘degree achievements’, as illustrated through the following two examples featuring intransitive and transitive *tilin* ‘be deep’:

- (14) *Jil -la tilin. A tilin -ma nde sɔnnɔn.*
 hole -DEF be deep 3SG be deep -IPFV INACT still
 ‘The hole is deep. It will still deepen.’
 ‘The hole was deepened. It will still be deepened.’

- (15) *N banta xɔlun -na tilin.*
 1SG PF well -DEF be deep
 ‘I have (already) deepened the well.’

N a tilin -ma nde sɔnnɔn.
 1SG 3SG be deep -IPFV INACT still
 ‘I will still deepen it.’

Yet, these verbs always refer to a change of state, as palpable from the realization-under-cessation test for *tilin* ‘be deep’ if a degree of change is specified, as illustrated through the degree-of-change test (cf. 1.8.4.5):

- (16) *N xɔlun -na tilin -ma meter naani.*
 1SG well -DEF be deep -IPFV meter four
 ‘I am deepening the well four meters.’

CHAPTER 5

- (17) *N mən m' aa tilin meter naani.*
 1SG yet NEG 3SG be deep meter four
 ‘I didn’t deepen it four meters yet.’

To summarize, the intransitive use of result verbs with stative readings is not only ambiguous between an active and a passive reading, but also exhibits the ambiguity between a stative and a change-of-state reading. This is parallel to the lexicalization patterns for all verbs with stative readings, which also differentiate the meaning of entering a state and being in a state aspectually rather than lexically. Therefore, the intransitive variant of these verbs can be analyzed as conforming to a stative event structure template as formalized by Rappaport Hovav & Levin (1998) (cf. 1.7.2.2), repeated below.

- (18) [X<STATE>]

In specific contexts, these verbs can receive a change of state interpretation and be analyzed as having a simple state change template:

- (19) [BECOME [X<STATE>]]

Again, these different possibilities of aspectual interpretation are tied to the stage-level vs. individual-level distinction introduced in 3.5.3. Intransitive non-passive readings of stative verbs can refer to individual-level, or inherent, properties of their subject referent. In that case, the option for a state change reading is ruled out. On the other hand, their intransitive readings can denote stage-level, or transitory, properties of that referent and hence are open to a state change reading, manifest in the admissibility of the imperfective, the *a i* construction, and the perfect.

For the transitive alternants of these verbs, a stative reading is ruled out, and a change-of-state interpretation is forced. Causative readings of these verbs, be they active or passive, can only refer to stage-level properties: one cannot externally cause a change of state unless it is construed as changeable, hence non-permanent. Consequently, the transitive alternants of these verbs are taken as instances of an externally caused change of state template, repeated in (20).

- (20) [X CAUSE[BECOME[Y<STATE>]]]

LEXICAL ARGUMENT STRUCTURE – CAUSATIVE/INCHOATIVE VERBS

As cross-linguistically expected for causative/inchoative alternating verbs (Haspelmath 1993, Guerssel *et al* 1985, Levin 1993, Levin & Rappaport Hovav 1995), the manner in which the lexically denoted change of state is brought about is not specified for these verbs. One can heat water by putting it on a fire; by leaving in the sun; it may get hot as the unintended side effect of a bush fire, etc. It is the (change of) state subevent that these verbs focus on, and accordingly they can also have an intransitive argument structure leaving out the causing subevent.

Finally, some remarks with respect to the transitive alternants denoting stage-level properties and to the intransitive variants denoting either individual-level properties (on stative readings) or stage-level properties (on state change readings) are in order here. It is not the availability of one reading exclusively that determines the argument structure alternations of the verbs in question. As noted in 3.5, many intransitive stative verbs denote stage-level properties – the change of which could easily be pictured as externally caused – but do not participate in the causative/inchoative alternation. On the other hand, the causative alternants of verbs with an optional stative reading in their intransitive non-passive use necessarily make reference to stage-level properties – otherwise these properties could not be externally changed – but this is not a lexical property of the verbs in question. Nothing speaks against the option of the result state of that change of state as being construed as an individual-level property. For instance, it may well be an individual-level property of the well in (15) above to be deep after I have deepened it – that well may remain in that state for a decade or longer. Likewise, it may well be a characteristic, permanent property of, let's say, diamond mines, to be deep. In order to refer to that individual-level property of a well or a mine being deep, a Jalonke speaker would make use of the intransitive inchoative reading of the verb *tilin* 'be deep'. Nevertheless, *tilin* 'be deep' is attested with external cause argument, too. It is thus not straightforwardly possible, as claimed by Levin & Rappaport Hovav (1995: 96) to equal individual-level property denoting verbs with the impossibility of external causation and stage-level property denoting verbs with the possibility of external causation. Levin & Rappaport Hovav argue that English alternating deadjectival verbs of change of state are always related to stage-level adjectives and not to individual-level adjectives – they are derived from adjectives that denote color, temperature, and physical characteristics. A survey of the alternating and non-alternating verbs with stative readings of Jalonke reveals that colors, temperatures, and physical characteristics can refer to both individual-level and stage-level properties, however. States like *fɔɔrɔ* 'be black' can denote individual-level properties of coal, but stage-level properties of pieces of papers, for instance, and states like

fura ‘be hot’ can be characteristic for fires, but transitory for water or food. The same indeterminacy holds for English – as remarked by Chierchia (1995) and Kratzer (1995), the distinction between stage-level and individual-level predicates is not a lexical one. Me having brown hair is only an individual-level property as long as I don’t have my hair dyed in a different color every month – the distinction depends on properties of the referent. Although some states are more likely to denote permanent properties than others are, this is merely a default interpretation that can be canceled. Accordingly, it is not assumed here that the distinction between stage-level and individual-level properties underlies the difference between stative verbs with inchoative readings and externally caused verbs of change of state with inchoative and stative readings.

5.3.3. PARTICIPANT STRUCTURE OF CAUSATIVE/INCHOATIVE ALTERNATING RESULT VERBS WITH STATIVE READINGS

As a consequence of the event structure templates instantiated by causative/inchoative alternating verbs with intransitive stative readings, I assume that they have a Theme participant that is in a state or undergoes a change of state. In the intransitive alternant, the Theme is linked to subject. Since, as demonstrated in 7.3.2, in the passive alternation, the Theme argument is likewise linked to subject and the Effector is not syntactically expressed, although semantically present, an ambiguity in the interpretation of intransitive clauses with causative/inchoative alternating verbs arises.

It was stated in 3.5.4 that intransitive stative verbs are compatible with controlled interpretations in the sense of Klaiman (1991, 1992) and the imperative only when denoting stage-level properties, because the sheer maintenance of a state cannot be controlled, only the entering into a state by an animate participant can optionally be. For the alternating verbs with stative readings, no intransitive context with an animate participant was uncovered so far in which control seemed to play a role or in which it could be positively specified. In view of the very limited number of verbs in this group and of the small number that appear with animate participants on a stage-level reading, this is not surprising. The two only verbs that regularly occur in non-permanent readings, *tɔɔrɔ* ‘suffer’ and *xɔnɔ* ‘hurt’, are lexically unable to coexist with a controlled interpretation because of their specific lexical semantics. Further investigations are necessary in order to determine whether *fiiɛ* ‘be white’ and *fɔɔrɔ* ‘be black’ can have controlled and uncontrolled interpretations on stage-level readings.

LEXICAL ARGUMENT STRUCTURE – CAUSATIVE/INCHOATIVE VERBS

The transitive alternants of these verbs take an Effector as their first participant; this Effector stands for the causing subevent. Control can be attributed to this Effector, but is not necessary. A positive specification for control is illustrated in (21); a negative specification for control in (22) (cf. 1.8.4.7).

- (21) *N an tewi -xi nde n kaid -εε fɔɔɔ.*
 1SG 1SG do deliberately -PF INACT 1SG paper -DEF be black
 ‘I did it deliberately to blacken the (piece of) paper.’

- (22) *N m' an tewi -xi nde n kaid -εε fɔɔɔ.*
 1SG NEG 3SG do deliberately -PF INACT 1SG paper -DEF be black
 ‘I didn’t do it deliberately to blacken the (piece of) paper.’

Kemb -ɔɔ bira a fari, tun!
 coal -DEF fall 3SG on DISC
 The coal fell/was dropped on it, that was it.’

5.4. CAUSATIVE/INCHOATIVE ALTERNATING RESULT VERBS

5.4.1. MEMBERS OF THE CLASS OF CAUSATIVE/INCHOATIVE ALTERNATING RESULT VERBS

As already mentioned, the three posture verbs *tii* ‘stand (up)’, *saa* ‘lie (down)’ and *dɔxɔ* ‘sit (down)’ belong to the class of causative/inchoative alternating result verbs. Among its members are also some ‘break’ verbs, such as *gira* ‘break, crush’. Only one verb of inherently directed motion, *soo* ‘enter’ is attested in the alternation – its antonym *mini* ‘exit’ has an intransitive argument structure. Three of the four Jalonke phasal verbs also alternate – these are the phasal verbs *jen* ‘end, stop’, *fɔlɔ* ‘begin, start’, and *luu* ‘leave (behind) stay, remain, cease, stop’. Only the egressive phasal verb *gaji* ‘end’ exclusively occurs with an intransitive argument structure. Table 2 lists the verbs in this subclass.

Table 2: All causative/inchoative result verbs in the Jalonke lexicon

<i>bira</i>	‘fall’
<i>dali</i>	‘get used to’
<i>dɔxɔ</i>	‘sit (down)’
<i>fɪndi</i>	‘transform’
<i>fɔlɔ</i>	‘start, begin’
<i>gira</i>	‘break, crush’

CHAPTER 5

<i>kafu</i>	‘add, associate’
<i>luu</i>	‘leave (behind), stay, cease, stop’
<i>nɔxɔ</i>	‘dirty’
<i>ɲɛn</i>	‘end, stop’
<i>ra-bii</i>	‘open (lit.: CAUS-cut)’
<i>saa</i>	‘lie/lay (down)’
<i>sindon</i>	‘hang (up)’
<i>soo</i>	‘enter’
<i>sɔrɔn</i>	‘fall (from a considerable height)’
<i>tii</i>	‘stand (up)’

5.4.2. EVENT STRUCTURE AND LEXICAL ASPECT OF CAUSATIVE/INCHOATIVE ALTERNATING RESULT VERBS

The remaining causative/inchoative alternating verbs have the same aspectual properties as the non-alternating verbs of change – they are pure verbs of change of state or location or result verbs. The non-alternating verbs with this event structure exhibit either only a causative use (externally caused result verbs, treated in 4.5) or only an inchoative use (uncaused result verbs, addressed in 3.4). Thus, the temporal properties of alternating result verbs are the same as those of their intransitive or transitive non-alternating counterparts, as illustrated in the following.

The verbs in this subclass encode discrete state changes. These verbs comprise the alternating verbs denoting human postures, *dɔxɔ* ‘sit (down), seat’, *saa* ‘lie/lay (down)’ and *tii* ‘stand (up)’. The result state of the change is incompatible with its source state for these verbs. The realization-under-cessation test introduced in 1.8.4.3 reveals their telic character. The imperfectively marked form, as in (23), signals that the situation is not yet completed, and the perfectly marked form, as in (24), indicates that the situation is completed, and that the result state still holds.

- (23) *N saa -ma (saar -ɛɛ fari). (N mɛn mun saa.)*
 1SG lie -IPFV bed -DEF on 1SG NEG lie
 ‘I am lying down (on the bed). (I haven’t laid down yet.)’
 ‘I am being lain down (on the bed). (I haven’t been lain down yet.)’

LEXICAL ARGUMENT STRUCTURE – CAUSATIVE/INCHOATIVE VERBS

- (24) *Haamidu tii -xi (tande -n' i.)*
 Haamidu stand -PFV courtyard -DEF at
 ‘Haamidu is standing (lit.: has stood up) (in the courtyard).’
 ‘Haamidu has been stood (in the courtyard).’

The duration-completion test (cf. 1.8.4.4) corroborates the state change semantics of these verbs. If modified with a temporal *kwi*-phrase, this *kwi*-phrase, rather than indicating its duration, specifies the time interval during which the corresponding event was completed, as illustrated by (25) and (26).

- (25) *A findi kwεε -ra -muxi -na 'a lεr keden nan kwi.*
 3SG transform night -with -person -DEF with hour one FOC in
 ‘He transformed into a sorcerer in one hour.’
 ‘He was transformed into a sorcerer in one hour.’

- (26) *A tagi -n' ii, a find -εε a ra.*
 3SG middle -DEF at 3SG transform -IPFV 3SG with
 ‘In the middle of it (lit.: in its middle), he is transforming into it.’
 ‘In the middle of it, he is being transformed into it.’

In accordance with all other verbs of change of state (cf. the default aspect test introduced in 1.8.4.1), the form zero-marked for tense and aspect, as in (27) denotes that the situation obtained in the past.

- (27) *A dɔxɔ (dag -εε fari).*
 3SG sit (down) mat -DEF on
 ‘He sat (on the mat)./It was (sitting) (on the mat).’
 ‘He/it was sat (on the mat).’

The same aspectual properties hold for the externally caused alternants of result verbs, illustrated for *dɔxɔ* ‘sit’ in (28):

- (28) *N biniir -εε dɔxɔ taabal -na fari.*
 1SG Bottle -DEF sit (down) Table -DEF on
 ‘I put (lit.: sat) the bottle on the table.’

Because of these aspectual characteristics, the verbs in question are analyzed as exclusively instantiating an uncaused – (29) – or externally caused – (30) – change

of state template not indicating the manner of that change of state, following the formalism employed by Rappaport Hovav & Levin (1998) and introduced in 1.7.2.2.

(29) [BECOME [X<STATE>]]

(30) [X CAUSE [BECOME [Y<STATE>]]]

5.4.3. PARTICIPANT STRUCTURE OF CAUSATIVE/INCHOATIVE ALTERNATING RESULT VERBS

The verbs in this subclass encode changes of state or position. Therefore, their participants can be identified, just as stated for the verbs with stative intransitive readings introduced in 5.3.3 above, as an Effector and a Theme. The Theme is linked to subject for intransitive alternants, again yielding an ambiguity between an active and a passive interpretation, and to object for the transitive alternants, the subject slot then being occupied by the Effector.

In contrast to the causative/inchoative verbs with stative readings, many of the verbs in this subclass appear equally often with animate Theme participants as with inanimate ones. This is particularly true for a subgroup of these verbs, the three posture verbs *saa* ‘lie (down)’, *tii* ‘stand (up)’ and *dəxə* ‘sit (down)’. Because posture (and positional) verbs have received considerable attention not only concerning their semantics (Ameka & Levinson in prep., Hellwig 2003, Newman 2002) but also their argument structure (Levin & Rappaport Hovav 1995) and lexicalization patterns in languages (Talmy 1985, 2000), they serve here to exemplify the ambiguity of the intransitive use of causative/inchoative alternating verbs in Jalonke. The three postural verbs of Jalonke form a subgroup of what has been labeled ‘verbs of spatial configuration’ by Levin & Rappaport Hovav (1995). They can be differentiated from other locative verbs on the basis of several characteristics. Semantically, they are all drawn from the postures of human beings, which encode spatial information about the internal configuration of an animate Figure, and then extended to the positions of inanimate Figures. According to Levin & Rappaport Hovav (1995), English verbs of spatial configuration can have four different senses, three noncausatives senses and one causative sense, attached to one single verb name. The different senses and their characteristics are summarized in Table 3, illustrated by English examples.

LEXICAL ARGUMENT STRUCTURE – CAUSATIVE/INCHOATIVE VERBS

Table 3: The senses of English verbs of spatial configuration after Levin & Rappaport Hovav (1995: 126-128)

Noncausative	Agentive	Maintain position sense	<i>Yvonne stood alone (in the hallway) (for six hours).</i>
	Agentive	Assume position sense	<i>Yvonne stood (up).</i>
	Nonagentive	Simple position sense	<i>The papers lay on the desk.</i>
Causative			<i>The usher sat the guests in the first row.</i>

For English, Levin & Rappaport Hovav argue in favor of four different lexical semantic representations for the four meanings. Since their arguments are relevant for the discussion of the participant structure properties of the postural verbs of Jalonke, they are recapitulated briefly here.

In their ‘maintain position’ sense, verbs of spatial configuration (in English) do not require a locational phrase. This feature distinguishes them from the ‘simple position sense’, where a locational phrase is obligatory, but not from the ‘assume position’ sense. In the ‘assume position’ meaning, however, the English verbs are not stative, as in the other two senses. Turning now to the causative sense, Levin & Rappaport Hovav show convincingly that for English, these verbs are not regularly related to the noncausative uses, either morphologically or semantically: Often, the causative form is not identical to the noncausative one (*lie* vs. *lay*). More importantly, the stative senses cannot be derived from a causative state-change template in their model of event structure templates. This leaves thus the ‘assume position’ sense, which might be said to be ‘inchoative’ in meaning, as the only possible derivation from the causative form. This derivation is nevertheless highly improbable because in the causative use, the Theme does not have to be animate, whereas it has to be so in the ‘assume position’ sense; and the Theme of the causative sense does not have to be able to assume a position out of its own control, unlike the Themes of the ‘assume position’ sense. On these grounds, Levin & Rappaport Hovav posit four different verb senses for verbs of spatial configuration in English. They explain the shared form for these four senses by a shared constant which instantiates the particular spatial configuration associated with the templates.

For Jalonke, the situation looks simpler. Posture verbs have two rather than four senses. The two senses encode the assumption of a specific position, one as externally caused, and the other as uncaused. The other senses that are distinguished lexically in English are a matter of interpretation in Jalonke. The aspectual proper-

CHAPTER 5

ties of postural verbs have been already outlined in 5.4.2. There, it was also illustrated that the two different English senses of assuming and maintaining a position are conflated in one lexical item. The sense of this item might be labeled ‘entering a position’ – in Jalonke, a Theme is not in a position, it has entered that position.

Turning now to animacy distinctions (related to the different senses in English), in applying the ‘monosemy bias’ (Ruhl 1989), it is possible to identify one general sense for these Jalonke verbs and attribute the differences in interpretation to properties of their participants and to stereotypical expectations. While it is generally true that animate Themes in intransitive uses of posture verbs are more likely to be interpreted as actively undergoing the change of location rather than passively, this expectation can be canceled. Consider the following examples. They all feature the alternating posture verb *saa* ‘lie (down)’ in clauses with a single human participant. Nevertheless, the examples are situated on a cline with respect to the preferred interpretations of the described events being one of an active or passive change of position.

- (31) *N saa -xi nde tun, n xii.*
 1SG lie (down) -PF INACT DISC 1SG sleep
 ‘When I had lain down, whoops, I slept.’ Sinaana 025
 ? ‘When I had been lain down, whoops, I slept.’

For (31), describing the act of going to bed, a passive interpretation is unlikely because of a combination of real-world knowledge and stereotypical expectations – physically able adult human beings are not normally put to bed. This reading is, however, implicated rather than entailed, because a passive reading would be the normal one if the speaker of the sentence was, for instance, paralyzed.

- (32) *Saare Kindia kan nda saa -xi teren -na tagi.*
 Saare Kindia owner some lie -PF field -DEF middle
 ‘A Saare Kindia player is lying (lit.: has lain down) in the middle of the (soccer) field.’
 ‘A Saare Kindia player has been lain down in the middle of the (soccer) field.’

In the case of (32), a soccer player is lying injured on the field. Whether this event is construed as externally caused or uncaused depends entirely on the information of the hearer about the previous events. In the specific case of (32), consultants'

LEXICAL ARGUMENT STRUCTURE – CAUSATIVE/INCHOATIVE VERBS

interpretations in the absence of a disambiguating context were undecided between the two possible scenarios.

- (33) *Dii -dii -na saa -xi jee -na xɔrɛra.*
 child -DIM -DEF lie -PF water -DEF in
 ‘The small child has been lain down in the water.’ River 448
 ? ‘The small child is lying (lit.: has lain down) in the water.’

Example (34) again yields clear preferences about the construal of the event as externally caused or uncaused, but this time they are the inverse of those for (31). A small child is lying in a basin in order to be washed. The other-induced interpretation clearly wins over the self-induced action interpretation because babies are not known to lie down by themselves in water in order to bathe.

If we now consider sentences featuring inanimate Themes in intransitive clauses containing *saa* ‘lie (down)’, the same indeterminacy is observable. In examples (34) through (36), the probability of a default passive interpretation decreases the further we go down:

- (34) *Kaidi -nee saa -xi taabal -na fari.*
 paper -DEF.PL lie (down) -PF table -DEF on
 ‘*The pieces of paper have laid down on the table.’
 ‘!The pieces of paper have been laid on the table./The papers are lying on the table.’

For (34), a passive interpretation is the norm – that at the same time a reading equivalent to the English stative or ‘simple position sense’ is conveyed is due to the vagueness of Jalonke posture verbs with respect to the different senses distinguishable in English.

- (35) *Wuri -bil -la tii -xi kɔl -la fari.*
 tree -trunk -DEF stand (up) -PF hill -DEF on
 ‘The tree is standing on the hill.’
 ‘The tree has been planted (lit.: stood) on the hill.’

Example (35) is roughly neutral with respect to a stereotypical expectation. The tree in question may have been planted by somebody, but a ‘simple position’ sense

CHAPTER 5

might be intended as well. That the standing of the tree cannot be interpreted as ‘agentive’ is a concomitant fact of its inanimacy – control (in the sense of Klaiman 1991, 1992) is not assigned at the lexical level but follows from its attribution to animate participants. One could argue that the sense of (35) must be different from the so far postulated ‘entering a position sense’ for all posture verbs of Jalonke, because trees do not normally change posture. The inadmissibility of the ‘entering a position’ reading again follows from world knowledge, though, and not from grammar. With respect to tense-aspect marking, this ‘simple position’ sense is not different from the other senses distinguishable in English: the verb must be marked for perfect in order to yield present time reference; a zero-marked form would yield past time reference, as for all verbs of change of state and contrasting with the ‘default aspect’ for stative verbs.

- (36) *Kɔl* *-la* *tii* *-xi*
 hill -DEF stand (up) -PF
 ‘The hill is standing
 ? ‘The hill has been stood

ji *muxi* *burexe* *-maa* *-na* *jaara*.
 DEM.PROX person leaf -type -DEF front
 in front of this green person.’

ECOM-Alpha H03

The endpoint of the cline is reached in (36), which is generally viewed as uncaused – hills, unlike papers, are not moved around freely. If prompted for the possibility of a passive interpretation for sentences like (36), Jalonke speakers engage in lengthy philosophical arguments and do not reach unanimity as to whether the standing of the hill is uncaused or caused by the entity that eventually can be viewed as externally causing everything by Jalonke speakers – Allah.

Many languages follow the pattern of English and use a locative adverb plus a copula or a verb of spatial configuration in order to assert the existence of a Figure, as in (37) and (38). In English, verbs of spatial configuration in their ‘simple position’ sense permit *there*-insertion (39).

(37) There are lions in Africa.

(38) There is a book on the table.

(Lyons 1968:390)

(39) There stood on the corner a statue of Jefferson.

(Levin 1993: 255)

Since in the ‘assume position’ sense, these verbs do not admit *there*-insertion, Levin & Rappaport Hovav (1995) group ‘simple position’ verbs with verbs of existence, in contrast to the other verbs of spatial configuration. Jalonke behaves differently in this respect: **all** affirmative sentences featuring posture verbs can be interpreted as asserting the existence of an entity. Thus, for instance, the examples given in (33) and (35) above, for instance, can also have an existential reading translatable as ‘There is a small child lying in the water’ and ‘There is a tree standing on the hill’ respectively. This structural ambiguity is due to the fact that the definite article has a much wider scope than in English (see 2.6.4.1,) and that there is no equivalent to *there*-insertion or similar constructions (e.g. French *il y a*), which marks existential sentences in many Indo-European languages. As mentioned in 2.9.1.3, Jalonke has a verbless existential construction, consisting of an NP encoding the entity whose existence is asserted and the demonstrative adverb *naa* ‘there’. Yet, all postural and dispositional verbs can optionally enter it, and locative sentences with all kinds of PPs can receive an existential interpretation. This ambiguity strengthens the evidence for a unified classification of Jalonke posture verbs instead of postulating a separate ‘simple position’ sense that is the only one allowing existential readings. Finally, according to Levin & Rappaport Hovav, in English, the ‘simple position’ sense is different from the other senses in that the verb is obligatorily accompanied by a locational PP (*A bottle stood on Birgit’s desk*). This observation does not hold for Jalonke:

(40) *Avion* *tii*.

plane (French) stand (up)

‘The plane stood.’

Labe 334

‘The plane was stood.’

To summarize, most senses that are morphosyntactically differentiated for posture verbs in English fall together in Jalonke, yielding only two senses for posture verbs. The Jalonke verbs are vague with respect to the senses of being in a simple position and assuming or maintaining a position. The only distinction at work in Jalonke is the one between externally caused senses – manifest in the causative alternant of these verbs – and uncaused senses – manifest in the inchoative alternant. Similar observations hold for the other members of the class of causative/inchoative alternating verbs. Whether these verbs are interpreted as inchoative or passive in the intransitive alternants follows partly from their participant struc-

CHAPTER 5

ture, which raises stereotypical expectation about their ability to actively participate in the change denoted by the verb, and partly from knowledge about the situation described.

5.5. SUMMARY

In this chapter, it has been shown that causative/inchoative alternating verbs have two different senses – an externally caused, transitive sense, instantiated by the causative alternant, and an uncaused, intransitive sense, instantiated by the inchoative alternant of these verbs (5.2). It has further been argued that the intransitive use of these verbs exhibits a semantic ambiguity and allows both an active and a passive interpretation. This ambiguity can be resolved in part through the participant structure of these verbs, and in part through knowledge of the real-world context. Section 5.3 has treated the subclass of causative/inchoative alternating verbs that do not only have state change, but also stative semantics. There, it has been shown that the membership of the verbs in this class does not follow from them denoting stage-level properties. Section 5.4 has been dedicated to the subclass of alternating verbs that exclusively have state change semantics. Within this subclass, special attention was paid to posture verbs, in order to demonstrate that they do not distinguish four different senses, as in English, but only two: the uncaused or externally caused entering into a position.

The following chapter addresses a class that is syntactically intermediate between transitive and intransitive verbs, but has a unique semantic motivation: reflexive-only verbs.

LEXICAL ARGUMENT STRUCTURE – REFLEXIVE-ONLY VERBS

CHAPTER 6

6.1. INTRODUCTION

This chapter takes up the last remaining argument structure class of Jalonke: reflexive-only verbs. Reflexive-only verbs are a small argument structure class: the lexicon comprises only 24 reflexive-only verbs so far. Reflexive-only verbs are motivated in terms of one feature exclusively relevant for their class, not for the other classes – reflexive only verbs denote eventualities that are always construed as controlled by the participant engaging in them.

The formal properties of the class and its difference from direct reflexive uses of transitive verbs, and the possible semantic motivations for its existence in terms of “low degree of elaboration” (Kemmer 1993: 208) of a two-participant event or as presupposing “the logical subject’s control” (Klaiman 1992: 51), are treated in 6.2. In 6.3, it is demonstrated that the class is motivated in terms of a positive specification for control,¹ and that this feature sets it apart from the other argument structure classes. The different event types instantiated by reflexive-only verbs are illustrated in 6.3.1 for manner verbs and in 6.3.2 for verbs of change or result verbs. A concluding section ends the discussion of reflexive-only verbs, followed by a summary of chapters 3-6 in 6.5.

¹ By ways of a reminder, I do not use control in the same way as Smith (1991). As mentioned in 1.7.2.2, Smith introduces the features *external* and *internal control* in order to differentiate between verbs denoting events that are brought about by the entity, typically a person, engaging in them, and not by an entity external to them. Since ‘internally controlled’ events, as remarked by Levin & Rappaport Hovav (1995) are not necessarily controlled in the sense of denoting deliberate actions, in accord with Levin & Rappaport Hovav, I use the term ‘internally caused’ instead.

6.2. REFLEXIVE-ONLY VERBS AS DENOTING CONTROLLED EVENTUALITIES

6.2.1. REFLEXIVE USES OF TRANSITIVE VERBS

Jalonke has a small group of verbs that exclusively have reflexive reference. The language has no grammatical category ‘reflexive’ manifest in a special set of pronouns or a verbal affix. Reflexive reference is merely achieved through coreferentiality of subject and object of a transitive verb. An example of a typical “archetypical reflexive context” (Faltz 1985: 3), “semantic reflexive function” (Klaiman 1992: 38) or “direct reflexive” (Kemmer 1993: 42), is given in (1). There, Effector and Theme of a transitive verb happen to be coreferential. The non-reflexive counterpart for (1) is given in (2):

- (1) *Nxo nxo ma- xaa.*
 1PL.E 1PL.E DISTR- wash
 ‘We washed ourselves.’

- (2) *N a ma- xaa*
 1SG 3SG DISTR- wash
 ‘I washed him.’

All transitive verbs with appropriate semantics, like *maxaa* ‘DISTR-wash’, can be used reflexively. In first and second persons, transitive and reflexive uses of a base transitive verb cannot be confounded, because the referent of the object pronoun is unambiguously indicated by deixis. With a pronominal object in the third person, however, ambiguity between coreferentiality or different referentiality of subject and object would arise if no additional marker were present, since third person pronouns can refer to more than one referent. In these cases, the object pronouns *a* ‘3SG’ and *e* ‘3PL’ are not attested with reflexive reference; they only occur with different referentiality, as illustrated in example (3). There, the clothes introduced in the first sentence are maintained throughout the stretch of discourse and referred to anaphorically by the 3PL object pronoun in the last sentence.

LEXICAL ARGUMENT STRUCTURE – REFLEXIVE-ONLY VERBS

- (3) *Nxo dunkobi -nee xaa haa e fiixe.*
 1PL:E old:cloth -DEF:PL_i wash until 3PL be white
 ‘We wash the old clothes until they are white.’

[...] *Ndee e xani -xi ε ε degε -de -n’ ii,*
 some 3PL_i send -PF 3PL POSS sew -place -DEF At
 some have sent them to the tailor (lit.: to their place of sewing),

e sig’ εε xon.
 3PL go 3PL_i at
 they go after them.

E e ma- xaa haa e fiixe.
 3PL_j 3PL_i DISTR- wash until 3PL be white
 They wash them (the clothes) until they are white.²

Tina 011, 014, 015

When reflexive reference is intended in the ambiguous syntactic contexts, it is implicated by using the possessive NP *a kanna* ‘his owner, type, guy’ in object position:

- (4) *A a kan -na faxa.*
 3SG 3SG owner -DEF kill
 ‘He killed himself.’

The marking of reflexivity only in third person contexts is typical for languages that are “functionally streamlined” (Faltz 1985: 118) in the marking of reflexivity. This type comprises for instance German and French, which mark reflexive reference only where necessary, by *sich* (German) and *se* (French) ‘himself/herself’. In these languages, according to Levinson (2000: chapter 4), when a semantically general expression, such as a pronoun, is used, coreference is implicated unless a reflexive form or an even more general semantic expression could have been used. It is expected that the extension of a special marking to all persons gives rise to a “strategically streamlined” system (Faltz 1985: 119), in which all persons have a special reflexive marker, as in English (*myself, yourself, herself, etc.*). The concepts of owner and self are typical source schemas for the grammaticalization of

² Note the absence of tense-aspect marking except for the form marked for perfect. The occurrence of zero-marked verb forms is due to the narrative context that is set to be about the events of tomorrow and hence not explicitly marked.

CHAPTER 6

reflexives (Heine & Kuteva 2002), so one might suspect that there is an ongoing process of grammaticalization in Jalonke. As example (5) shows, however, *kan* ‘owner, type, guy’ still functions as an unbleached lexical item and doesn’t entail reflexivity in uses like (4). The reflexivity in (4) is still conveyed uniquely by a coreferential interpretation of subject and possessive NP. This coreferential interpretation is merely implicated and is excluded in certain contexts, as in (5), where the buyer of the goat clearly does not pay himself but the seller of the goat.

- (5) *A sii -na naaxan sara -xi*
 3SG goat -DEF REL buy -PF
 ‘The goat which he has bought,
- a men mun a kan -na joxɔ.*
 3SG_i yet NRG 3SG owner -DEF_j pay
 he hasn’t paid its owner yet.’

6.2.2. SYNTACTIC AND SEMANTIC PROPERTIES OF REFLEXIVE-ONLY VERBS

Besides direct reflexive uses of transitive verbs, Jalonke has a group of reflexive-only verbs. An example of a such a reflexive-only verb is given below:

- (6) *Nxo nxo gii.*
 1PL.E 1PL.E run
 ‘We ran.’

It is impossible to use a reflexive-only verb without coreferentiality of subject and object as in (7), unless the verb is morphologically causativized, as in (8):

- (7) **Nxo a gii.*
 1PL.E 3SG run
 * ‘We ran him.’
- (8) *Nxo a ra- gii.*
 1PL.E 3SG CAUS- run
 ‘We made him run.’

Since verbs like *gii* ‘run’ are obligatorily reflexive, no possible ambiguity arises in third person contexts, and accordingly, these contexts are never emphatically dis-

LEXICAL ARGUMENT STRUCTURE – REFLEXIVE-ONLY VERBS

ambiguated, but simply exhibit two third person pronouns that have to be understood as coreferential:

- (9) *Taaxalumm -aa a gii gudugudugudu.*
 rabbit -DEF 3SG run IDEO
 ‘Rabbit ran *gudugudugudu*.’
 * ‘Rabbit ran him *gudugudugudu*.’

Dendelle 150

In view of their morphosyntactic properties, reflexive-only verbs may be said to occupy the ‘middle ground’ between base intransitive and base transitive verbs. Just like base intransitives, but differently to base transitive verbs, these verbs must be morphologically causativized in order to admit a non-coreferential direct object:

- (10) *Teren -na. A nxo ra- gii haa nxo siga,*
 train -DEF 3SG 1PL.E CAUS- run until 1PL.E go
 ‘The train. It drove us (lit.: made us run) until we went,

nxo Kungel lii.
 1PL.E Kungel find
 we found Kungel.’

Alpha 024

In analogy to base transitive verbs, on the other hand, these verbs have two syntactic arguments – but then again, situationally, there is only one participant present. With respect to the possessive construction in which they appear (cf. 8.4.2) nominalizations of all reflexive-only verbs pattern like the majority of intransitive verbs: they only ever allow the alienable possessive construction. Thus, in their formal argument structure parameters, they are best regarded as intermediate between the two poles of intransitive and transitive verbs. With respect to their behavior in combination with the causative marker (cf. 7.3.1.5), the verbs pattern with uncaused intransitive verbs: the causative marker is obligatory but can express direct as well as indirect causation.

Reflexive-only verbs in Jalonke comprise a number of verbs of manner of motion like *jere* ‘walk’. The group further contains a handful of verbs of inherently directed motion of which most involve a change in posture like *sɔnsɔnkɔli* ‘squat, crouch’. Other members are a few verbs of cognition, emotion, and perception, like *xarai* ‘turn silent, patient’, some verbs of ingesting, like *dɛɛibaa* ‘breakfast’, and the verbs *jungu* ‘say good-bye’ and *tewi* ‘do deliberately’. Reflexive-only verbs

CHAPTER 6

only take animate participants, with the exception of clearly metaphorical extensions of the verb *gii* ‘run’ to vehicles like trains, cars, and bicycles.

In order to come up with an explanation for the reflexive-only argument structure of the verbs in question, cross-linguistic semantic accounts for reflexives and/or middle verbs are introduced in the following paragraphs.

Two hypotheses are relevant for these semantic accounts:

(i) The low elaboration hypothesis (Kemmer 1993). This hypothesis predicts that reflexive marking is used for event descriptions with two participants when the event is viewed as having low elaboration in terms of the distinguishability of the two participants.

(ii) The control hypothesis (Klaiman 1991, 1992). The control hypothesis predicts that reflexive-only verbs are motivated in terms of denoting events viewed as controlled by their participants.

The two hypotheses are introduced in detail in the following paragraphs, and the different predictions they make for different semantic domains are addressed before proceeding to the assessments of these predictions for Jalonke.

(i) The low elaboration hypothesis. The account behind this hypothesis builds on the semantic domains attested as reflexive-only or middle verbs, and on the comparison of these verbs with verbs of the same semantic domains in other argument structure classes. Verbs of the following semantic domains are cross-linguistically attested to be attained by reflexive or middle marking (if the language in question has such a category): manner of motion (German *sich schütteln* ‘shake’); inherently directed motion specifically involving changes in posture (French *s’agenouiller* ‘kneel’); and cognition, emotion and perception (German *sich erinnern* ‘remember’) (Kemmer 1993; Klaiman 1991, 1992 *inter alia*). Verbs of these semantic domains can be reflexive-only verbs in Jalonke, too. If middles and reflexives are not distinguished in formal marking (as in German, French, or Spanish), these uses of verbs are often coined ‘middle reflexives’ (Klaiman 1991, 1992). Other domains commonly associated with middle reflexives across languages are the following: actions of grooming and bodily care (French *se raser* ‘shave’), the posture verbs ‘sit’, ‘stand’ and ‘lie’ (German *sich hinlegen* ‘lie down’), indirect or benefactive middles (English *I bought myself a car*), and recip-

rocal events (French *s'embrasser* 'embrace'). Verbs of these domains are not attested as reflexive-only verbs in Jalonke. Further cross-linguistically observed reflexive middle classes comprise emotion middles (German *sich beschweren* 'complain'), and inchoative (Spanish *caerse* 'fall') and anticausative verbs (Spanish *romperse* 'break', French *se briser* 'break'). Verbs of these domains also do not fall under obligatorily or optionally reflexive verbs in Jalonke.

Kemmer (1993) situates different situation types on a cline with respect to their proximity to direct reflexive situations on the one hand and situations typically lexicalized by intransitive verbs on the other hand. She claims that certain middle reflexive verbs are close to direct reflexive situations, because they involve two distinguishable participants – as is the case for verbs of manner of motion, followed by verbs of grooming and bodily care and posture verbs. Verbs of inherently directed motion on the other hand are closer to one-participant events and involve even lower distinguishability of participants than the other middle reflexive verbs. Kemmer further predicts that if reflexive markers are extended to mark other than direct reflexive situations, they proceed from those situations closest to direct reflexive situations down to situations typically construed as one-participant events. In other words, the diachronic origin of these middle reflexives lies in a detransitivizing of transitive verbs through coreferentiality of their two participants. Middle reflexive marking then extends to mark anticausatives and other detransitivizing processes. Once a class of exclusively middle reflexive verbs has evolved, this class attracts verbs with an originally intransitive argument structure, too. As a result, Kemmer observes that for cases in which there is a variation within and across languages for verbs of identical or comparable semantic domains in argument structure class membership:

Classes in which the MM [middle marked verbs] often [...] coexist alongside transitive unmarked forms are the body care, nontranslational motion, change in body posture, indirect middle, naturally reciprocal event, spontaneous event, and emotion middle types. For verbs in all of these classes, save the natural reciprocal and the indirect middle, the corresponding unmarked root verb is typically semantically causative. MM classes whose verbs do not generally have corresponding unmarked transitive verbs, and which have received little attention in the literature, are the emotive speech action, other speech action, translational motion, and cognition middle classes. Particularly for the latter two classes, where unmarked forms exist, they are often intransitive, in keeping with the natural one-participant semantics of the root verb meanings [...] (Kemmer 1993: 21f.)

CHAPTER 6

Because reflexive and middle are not distinguished in languages that use the same form to mark them, they are both opposed to transitive verbs involving situations with two distinct participants. Only in languages where reflexive and middle are distinguished from each other in formal marking, transitive, direct reflexive, and middle reflexive situations are semantically contrasted with middles. Nevertheless, independently of the cut-off points, for Kemmer the criterion underlying both reflexive and middle marking is always low elaboration of the corresponding event in terms of the distinguishability of participants.

(ii) The control hypothesis. Klaiman (1991, 1992), in contrast to Kemmer, distinguishes between middle reflexives (on her account verbs that exist alongside transitive forms French *raser quelqu'un* ‘shave somebody’ vs. *se raser* ‘shave’) and middle (i.e. non-varying) verbs of a middle voice system (French *s’agenouiller* ‘kneel’). Klaiman proposes different semantic motivations for the two classes. For middle reflexive verbs, Klaiman agrees with Kemmer in the motivation for the class of middle reflexive verbs. The events denoted by middle reflexives are construed as involving two participants, but there is no semantic reason to conceptually separate them. Thus, for verbs of manner of motion (verbs of nontranslational motion in Kemmer and Klaiman’s terms), there is an entity acted on – the body – but at the same time, this body or specific body part belongs to the Effector who acts on it. This body part is then per synecdoche referred to by its meronym, which is of course coreferential with the Effector. This interpretation is confirmed through other verbs typically belonging to the class of middle reflexive verbs cross-linguistically, namely verbs of grooming and bodily care and those verbs of inherently directed motion that involve a change in body posture, such as ‘kneel’ or ‘crouch’, where specific body parts of an entity are acted on. These cases can be seen as close to direct reflexive situations in that they involve a decrease in transitivity through conflation of two syntactic participants in one referential entity. A further criterion for the membership of verbs of grooming and bodily care and change in posture in the class of middle reflexive verbs is whether the events denoted by these verbs are viewed as predominantly self-induced vs. other-induced. This criterion has to do with culture-specific expectations for the concerned events.

Klaiman (1991, 1992) argues in favor of a separate treatment of middle verbs as members of a voice system in which some verbs do not exhaust the full range of voice options, or do not use voice differentially for semantic contrasts but are limited to the middle. (Note that I do not claim that Jalonke makes use of a formal voice system. However, since the reflexive-only verbs of the language might well

LEXICAL ARGUMENT STRUCTURE – REFLEXIVE-ONLY VERBS

be semantically construed in a similar way as the middle deponents of a language with formal voice oppositions, Klaiman's predictions for middle verbs are considered here.) For middle verbs, Klaiman argues that, in contrast to middle reflexive verbs:

These [the non-alternating MIDDLE predicates] are about as likely to be transitive as intransitive. Typically, members of this class are semantically converse to ACTIVE predicates, since the situations they denote presuppose the logical subject's control. Also, they often express events whose effects devolve upon the logical subject, thereby presupposing its sentience as well.

For instance, there typically gravitate to this class predicates denoting controllable, non-translational bodily acts or motion, e.g. 'fly' 'saunter' and so on. Also, this class includes predicates expressing controllable physical postures and attitudes, such as 'kneel', 'stoop' and the like. (Klaiman 1992: 51)

There are thus two different hypotheses that might account for the class of reflexive-only verbs of Jalonke. The low elaboration hypothesis predicts that reflexive and middle marking attains verbs with two participants whose distinguishability is low first, and then extends to other domains. The control hypothesis makes a different prediction for middle verbs, which should be motivated in terms of a positive specification for control, than for middle reflexive verbs, for which the low elaboration hypothesis should hold.

Partly, the two hypotheses give different motivations for the same semantic domains, for the verbs expressing grooming and bodily care and for the verbs involving "change in body posture" (Kemmer 1993) or "controllable physical postures" (Klaiman 1992). The different hypotheses are thus testable. If low elaboration of the event were responsible for the argument structure of verbs of the relevant semantic domains, one would expect that all the verbs in question would be reflexive-only if the action denoted by the verb were typically only applied to oneself. The verbs of these domains would be transitive if typically applied to the bodies of others, the direct reflexive then being merely a special case of the transitive one. Moreover, one would expect that the semantic domains lower on Kemmer's cline – verbs of inherently directed motion – would only be affected by reflexive marking if the semantic domains higher on the cline (i.e. closer to direct reflexive situations) – verbs of manner of motion, verbs of grooming and bodily care and of change in body posture – were also reflexive. If however the ability of assigning

CHAPTER 6

control were at issue, one would expect different cut-off points. In this case, only those verbs that are exclusively predicated of animate participants should lexicalize as obligatorily reflexive verbs, since control presupposes the possibility of deliberately starting, carrying out, or stopping the verb action. It should play no role whether the verbs belong to semantic domains higher or lower on Kemmer's cline, because resemblance to two-participant events vs. resemblance to one-participant events should be irrelevant.

In Jalonke, low elaboration never seems to be the criterion that determines the argument structure of reflexive-only verbs. Low elaboration of the events of grooming and bodily care does not seem to play a role, because even those verbs of the concerned domains that are typically performed only self-induced are lexicalized as transitive verbs with the acted-on body part as objects. These verbs include verbs like 'brush one's teeth'. Alternatively, the verbs are realized as transitive verbs with the applied substance as the object and the concerned body part as the adjunct, as for 'cream' or 'put on make-up' (see (13) below).

Control, in contrast, is relevant to reflexive-only verbs of Jalonke: only those verbs of the semantic domain of manner of motion and posture change are realized as reflexive-only that lexically specify animate participants. These verbs comprise verbs such as *sɔnsɔnkɔli* 'crouch, squat', *ximbisin* 'kneel', *sengisengi* 'tiptoe', and *ibɛndun* 'stretch'. Those posture verbs that are not limited to animate participants – *dɔxɔ* 'sit (down)', *saa* 'lie (down)', and *tii* 'stand (up)' – participate in the causative/inchoative alternation (introduced in chapter 5). This means that these verbs have externally caused, hence transitive uses and can occasionally appear intransitively, then ambiguous between an inchoative interpretation (of the intransitive alternant) or a passive interpretation (of the transitive alternant). If the causative/inchoative alternating posture verbs are used intransitively with animate participants, control can be implicated, but is never entailed, as shown in 5.4.3. More importantly for the issue at hand, these verbs, although allowing a transitive argument structure, never occur as reflexives, just like all other causative/inchoative alternating verbs. Causative/inchoative alternating verbs thus never exploit the possibility of reflexive marking in order to detransitivize (cf. German *sich setzen* 'sit (lit.: seat oneself)' or anticausativize (cf. French *s'ouvrir* 'open (lit.: open oneself)'). These findings corroborate the point that the class of reflexive-only verbs in Jalonke does not have the widely noticed detransitivizing functions attributed to middle reflexive marking. This detransitivizing function is only attested in direct reflexives from transitive verbs. There is thus strong evidence to

reject the motivation of low elaboration as underlying the class of reflexive-only verbs.

Control, and not low elaboration of a two-participant event, also differentiates Jalonke reflexive-only verbs from all other intransitive verbs. Even intransitive internally caused verbs in Jalonke – that is, verbs that can only be conceptualized as brought about by very specific, typically animate, entities – do not automatically assign control, two verbs, *tugan* ‘jump, fly’ and *maguu* ‘swim’ exempted, as already mentioned in 3.3.4. What distinguishes reflexive-only verbs from transitive verbs is not a different specification for control, though. Most transitive verbs assign control if predicated of animate participants, although not all have to – under these cases fall *faxa* ‘kill’, *xəreidin* ‘push’ and a few other transitive verbs, which can be construed as occurring accidentally. The majority of transitive verbs presuppose control on behalf of their Effector, but this is not the criterion determining their argument structure properties. As argued before, the contrast motivating intransitive and transitive verbs is the construal of the event as occurring without an external cause in the former case, and with an external cause in the latter case. Reflexive-only verbs thus cross-cut the principles of lexical organization of Jalonke verbs by employing a different motivation that underlies their class membership. These findings also confirm Klaiman’s observations that reflexive middles are to be differentiated from middle verbs, and that there is no unified semantic motivation in terms of low elaboration of a two-participant event underlying both, as claimed by Kemmer (1993: 215) for languages in which reflexive and middle marker are identical.

6.3. PARTICIPANT STRUCTURE OF REFLEXIVE-ONLY VERBS

In the previous paragraph, a case was made for the notion of control, not of low elaboration of a two-participant event, as motivating the class of reflexive-only verbs in Jalonke. That this is indeed the case is now demonstrated by proving first that low elaboration plays no role for membership in the class.

Are reflexive-only verbs of Jalonke construed as events that involve two participants, but in which the second participant can be understood as belonging to the first participant – as his body part, for instance – and is therefore not separately conceptualized, leading to two syntactic participants that are coreferential? This would be at first sight a possible explanation for the semantic domains attained by reflexive-only argument structure. Manner of motion verbs like *gii* ‘run’ might

CHAPTER 6

well involve an Effector who acts on a Theme which, because it consists of the Effector's legs is perceived as the Effector. Likewise, the reflexive-only verbs of inherently directed motions, as *ximbisin* 'kneel', might be understood as concerning an Effector who brings his knees in a specific posture, and in consequence again acts on himself. And finally, the verbs of cognition, emotion, and perception belonging to the reflexive-only class, such as *jaaxani* 'perceive' might also be interpreted as involving the eyes or senses that are parts of the Effector. Nevertheless, there are facts that speak against such an analysis of reflexive-only verbs in Jalonke: an important semantic domain expected to belong to the deponents on the 'low elaboration' account is present with verbs of grooming and bodily care, where Effectors regularly groom their own body parts. This domain is, however, exclusively lexicalized in transitive verbs taking the respective (possessed) body parts as objects or adjuncts, as illustrated below for the verbs *dembe* 'plait', *xunna bii* 'shave (lit.: head-DEF cut)', *makiyas-na saa* 'put on makeup' (lit.: makeup-DEF lie)' and *jnin-nee malugan* 'brush one's teeth (lit: tooth-DEF:PL brush)'.³ *Dembe* 'plait' is an action that in the Jalonke culture typically is performed on others. Hence, the direct reflexive use with implicated coreference of Effector and Possessor of the body part is a subcase of the transitive one, as in (11). *Xunna bii* 'shave' (12) is neutral with respect to a preferred occurrence as performed on one's own hair vs. on others – men shave themselves, but shaving a baby's head is a central part of baptizing ceremonies. The actions of putting on makeup (13) and brushing teeth however, are always only performed on oneself in the culture. Applying makeup is not part of daily grooming but a recently borrowed custom that young girls perform on themselves demonstrating that they are modern and westernized. Tooth brushing is performed by chewing on a stick and only done by people young or old enough to do it themselves. Nevertheless, meronymic expression of the owner of the body part that is predictably concerned and predictably possessed by the Effector never occurs.

- (11) *A a xun -na dembe -xi na, a faa.*
 3SG 3SG head -DEF plait -PF when 3SG come
 'When she had plaited her head, she came.' Ndereeji 012

³ Malugan, although diachronically most plausibly derived with *ma-*, the distributive marker, has no monomorphemic correspondence and no other use than in the action of brushing teeth. It is for purely mnemonic reasons glossed as 'brush', although it might well mean 'chew on piece of wood in order to clean (teeth)'.

LEXICAL ARGUMENT STRUCTURE – REFLEXIVE-ONLY VERBS

- (12) *E a xun -na bii -ma.*
 3PL 3SG head -DEF cut -IPFV
 ‘The are shaving its (the child’s) head.’ Baptism 002

- (13) *A banta makiyas -na saa a dεε -na ‘a*
 3SG PF makeup -DEF lie 3SG mouth -DEF with
 ‘She has (already) put makeup on her mouth.’

The body parts acted on in these examples and for all other verbs of grooming are always construed as a separate entity. This separate entity either corresponds to the Theme and is linked to object, as in (11), or it corresponds to the Goal of applying a Theme to it, as in (13). Unless we find a reason to make a special case for the verbs of grooming and bodily care, there is thus a quite unpredictable cut-off point if we want to maintain the ‘low elaboration’ hypothesis. Turning to verbs of change of posture, as pointed out in the preceding paragraph, these verbs are not exclusively predicated of animate participants, and they participate in the causative/inchoative alternation. Either they have an external cause element present as the subject of a transitive clause (14), or they appear in intransitive clauses (15) and (16). These intransitive clauses are – without knowledge of the real-world context – ambiguous between a passive reading of the transitive alternant and an inchoative reading of the intransitive alternant. Only in cases like (15) and (16), which are descriptions of a video stimulus in which a bottle was put on a table vs. put itself on the table, is a disambiguation possible. Note that this ambiguity also holds if the single arguments of the inchoative alternants of these verbs are animate, as demonstrated in 5.4.3.

- (14) *A biniir -εε dɔxɔ taabal -na fari.*
 3SG bottle -DEF sit (down) table -DEF on
 ‘She put (lit.: sat) the bottle on the table.’ Caused positions-47 AB

- (15) *Biniir -εε dɔɔ -xi taabal -na fari.*
 bottle -DEF sit (down) -PF table -DEF on
 (Answer to: ‘What happened to the bottle?’)
 ‘The bottle has been put (lit.: sat) on the table.’ Caused positions-47 AB

CHAPTER 6

- (16) *Biniir -εε dɔɔ -xi taabal -na fari.*
 bottle -DEF sit (down) -PF table -DEF on
 (Answer to ‘What happened to the bottle?’) Caused positions-56
 ‘The bottle has stood (lit. sat) on the table.’ AB

Of particular relevance for the present context is that these verbs are not acceptable in either detransitivizing reflexive uses (17) or anticausative reflexive uses (18):

- (17) **N an dɔxɔ dag -εε fari.*
 1SG 1SG sit (down) mat -DEF on
 * ‘I sat myself on the mat.’
- (18) **Biniir -εε a dɔxɔ taabal -na fari.*
 bottle -DEF 3SG sit (down) table -DEF on
 * ‘The bottle sat itself on the table.’

The general absence of transitive variants for reflexive-only verbs is in accordance with the ungrammaticality of causative/inchoative verbs with reflexive reference. This observation makes it even more improbable that reflexive-only verbs of Jalonke were ever conceptualized as two-participant events.

Let us now turn to the second, the control hypothesis. Klaiman accounts for middle verbs through the admission that the events denoted by these verbs are always construed as controlled by the Effector that engages in them, and who consequently should have recognizable Agent properties. Klaiman moreover claims that the property of control sets middle verbs apart from – mainly intransitive – active verbs. How does the ‘control’ hypothesis work for the concerned verbs in Jalonke, and does it differentiate them from the other argument structure classes? In order to demonstrate that reflexive-only verbs in Jalonke are indeed sensitive to the feature **control**, it has to be shown that they entail deliberate action on the part of a human participant. This is indeed the case.

Before we consider how reflexive-only verbs in Jalonke assign control, a few words on control, intention, volition, and similar terms are in order. Volitionality on my account is not equivalent to control – one may want to do something, like finish one’s dissertation, become rich, grow long hair or stop crying – but still not be able to actively control the coming about, carrying out, and end of the corre-

LEXICAL ARGUMENT STRUCTURE – REFLEXIVE-ONLY VERBS

sponding events. On the other hand, one may well control an action without wanting it – like washing the dishes, convincing somebody (as remarked by Dowty 1991: 552) or making somebody cry. This finding renders most tests for control problematic because it is generally not considered that these tests might yield different results with respect to volition/intention and control. Whether a verb can occur in the imperative, be a complement of *want*, *persuade*, *force* or *try*, whether it can appear after a pseudo-cleft containing *do*, or whether it is compatible with the adverbs *deliberately* and *intentionally* (Dowty 1979, 1991, Givón 1975, Smith 1991, Van Valin 1997, Van Valin & Wilkins 1996) tests for a number of composite notions. These notions are not or cannot be disentangled in most cases. It is not the purpose of this study to come up with a generally valid definition for the terms in question; my intention here is merely to show that in Jalonke, only control is relevant for the semantic motivation of an argument structure class. A positive specification for control is the criterion that determines the argument structure of reflexive-only verbs.

First consider reflexive-only manner of motion verbs. The events denoted by these verbs are always construed as controlled. This feature is illustrated through the acceptability of a controlled reading in (19) and the unacceptability of an uncontrolled reading in (20). It is noteworthy that the verb denoting controlled action, *tewi* ‘do deliberately’ itself is a reflexive-only verb.

- (19) *N an tewi -xi nde*
 1SG 1SG do deliberately -PF INACT
 ‘I did it deliberately,

n xa n jɛrɛ taa -na kwi.
 1SG SUBJ 1SG walk village -DEF in
 to take a walk in the village.’

- (20) **N m' an tewi -xi nde*
 1SG NEG 3SG do deliberately -PF INACT
 *‘I didn’t do it deliberately

n xa n jɛrɛ taa -na kwi.
 1SG SUBJ 1SG walk village -DEF in
 to walk in the village.’

CHAPTER 6

The ungrammaticality of an uncontrolled interpretation also holds for reflexive-only verbs of inherently directed motion, most of which involve a change in body posture:

- (21) **N m' an tewi -xi nde*
 1SG NEG 3SG do deliberately -PF INACT
 *‘I didn’t do it deliberately

n xa n ximbisin.
 1SG SUBJ 1SG kneel
 to kneel.’

Finally, the verbs of cognition and perception that appear in the reflexive class of Jalonke also exclude uncontrolled engagement in the action denoted by the verb:

- (22) **N m' an tewi -xi nde*
 1SG NEG 3SG do deliberately -PF INACT
 *‘I didn’t do it deliberately

n xa n mapaxun Adama ma
 1SG SUBJ 1SG think Adama at
 to think of Adama.’

It remains to be established whether the fact that they are positively specified for control distinguishes the verbs in question from intransitive and transitive verbs. As already stated, intransitive verbs in Jalonke as a class are not specified for control, that is, they simply have an Effector in their participant structure. If this Effector takes on Agent properties, this is specified for individual verbs or a matter of implicature rather than of entailment by semantic properties of the verb. In order to demonstrate that control is indeed the property that differentiates between intransitive and reflexive-only verbs, I take up intransitive verbs of manner of motion, of inherently directed motion, and of cognition, emotion, and perception – that is, the semantic domains that are also lexicalized by reflexive-only verbs, again. Intransitive verbs of manner of motion are not specified for control; and some of them, as certain involuntary actions like *suurun* ‘skid’ (23), are always construed as uncontrolled. This observation holds for the entire class of intransitive verbs of manner of motion, with the two exceptions *tugan* ‘jump, fly’ and *maguu* ‘swim’, which are lexically specified for control.

LEXICAL ARGUMENT STRUCTURE – REFLEXIVE-ONLY VERBS

- (23) *N m' an tewi -xi nde*
 1SG NEG 3SG do deliberately -PF INACT
 'I didn't do it deliberately
- n xa suurun gem -εε fari.*
 1SG SUBJ skid rock -DEF on
 to skid on the rock.'

Intransitive verbs of inherently directed motion yield the same findings as intransitive verbs of manner of motion: they can be positively specified for control, but this is not lexically entailed, as demonstrated through the following example featuring *mini* 'exit' in an uncontrolled context:

- (24) *N m' an tewi -xi nde*
 1SG NEG 3SG do deliberately -PF INACT
 'I didn't do it deliberately
- n xa mini banxi -n' ii.*
 1SG SUBJ exit house -DEF in
 to exit the house.
- n jentunu -xi nde.*
 1SG be absentminded -PF INACT
 I was absentminded.'

Finally, intransitive verbs of cognition, emotion and perception are mostly lexicalized as stative verbs with optional state-change readings when they are understood as denoting stage-level properties (see 3.5). For their stative readings, a controlled interpretation is ruled out due to their lack of dynamicity, but even on a state change interpretation, the notion of control seems to be irrelevant to these verbs, and no context could be uncovered so far in which control was present. For intransitive verbs of cognition, emotion, and perception, both controlled and uncontrolled readings are thus inapplicable, as illustrated with *naxan* 'be happy below:

- (25) **N an tewi -xi nde*
 1SG 3SG do deliberately -PF INACT
 *'I did it deliberately

CHAPTER 6

n jaxan i bε.
 1SG be happy 2SG for
 to be happy because of you.'

- (26) **N m' an tewi -xi nde*
 1SG NEG 3SG do deliberately -PF INACT
 *'I didn't do it deliberately

n jaxan i bε
 1SG be happy 2SG for
 to be happy because of you.'

When comparing intransitive and reflexive verbs of the same semantic domains, we therefore find that the control hypothesis accounts for the differences in argument structure between them – *maguu* 'swim' and *tugan* 'fly' left aside, intransitive verbs do not incorporate the notion of control or agentivity at the lexical level, but reflexive-only verbs consistently do so.

Klaiman (1991, 1992) only contrasts intransitive verbs exclusively in the active voice with middle verbs. She does not extend her comparison to transitive active verbs. These verbs do not seem relevant in order to test the feature of control, regardless of whether they assign obligatory control or not, because what is relevant for their class membership is that they have an external cause element. Semantically direct reflexive situations hence are construed as special instances of externally caused situations in that the Effector and the Theme are coreferential, but otherwise not different from externally caused situations. This is the case in Jalonke, as illustrated through the reflexive uses of transitive verbs in (1) above, and it is also the case of verbs of grooming and bodily care. These verbs are construed as externally caused situations in which a body part and its owner are not confounded (cf. (11)-(13) above).

The following sections give an overview of the event types realized by reflexive-only verbs.

6.3.1. REFLEXIVE-ONLY MANNER VERBS

6.3.1.1. MEMBERS OF THE CLASS OF REFLEXIVE-ONLY MANNER VERBS

The manner verbs among the reflexive-only verbs of Jalonke are all verbs of manner of motion. A list of all the verbs in this subclass is given in Table 1.

LEXICAL ARGUMENT STRUCTURE – REFLEXIVE-ONLY VERBS

Table 1: All reflexive-only verbs of manner of motion in Jalonke

<i>gii</i>	‘run’
<i>i-bendun</i>	‘stretch (lit.: IT-pull)’
<i>ma-furaa</i>	‘hurry’ (DISTR only)
<i>ɲɛɛ</i>	‘walk’
<i>sengisengi</i>	‘tiptoe’
<i>singesinge</i>	‘make a race’
<i>xulun</i>	‘hurry’

Two of the verbs, *mafuraa* ‘hurry’ and *xulun* ‘hurry’ seem to be very close in meaning. Only *xulun*, however, is attested as a manner adjunct with a verb of directed motion, as in (27):

- (27) *Muxi burexe -kan -na tee a xulun na kol -la ‘a.*
 person leaf -type -DEF ascend 3SG hurry with hill -DEF with
 ‘The green person ascended the hill hurrying.’ Tomatoman-M 007

These two verbs have intransitive variants meaning ‘be quick (at)/be fast (at)’, as in the examples below. That these variants are stative is evident through their present time reference when zero-marked for aspect:

- (28) *N xulun wale -soo -de -n’ ii.*
 1SG be quick work -enter -place -DEF at
 ‘I am quick at working.’

- (29) *Putuput- ɔɔ ma- furaa foore -soo -na bɛ.*
 motorbike -DEF DISTR- be fast iron -horse -DEF for
 ‘A motorbike is faster than a bicycle.’

Interestingly, particularly verbs of manner of motion show a large degree of variability in dialects of Manding, another CM language, as far as their argument structure properties are described. Thus, Grégoire (1985) looks at the verb *bòrí* ‘run’ in Maninka and at the behavior of its cognates in other dialects of Manding. In Maninka, ‘run’ is used reflexively for self-induced motion and transitively for other-induced motion. In Mandinka, the verb is limited to self-induced motion since it cannot have an underived causative use, but enters both intransitive and reflexive clauses. In Bambara, the self-induced use of the cognate verb *bòli* ‘run’ is encoded by an intransitive verb, the other-induced use by an alternating transitive verb.

CHAPTER 6

Grégoire states a similar range for other verbs of manner of motion. She comes to the conclusion that these verbs probably originated as intransitive verbs; that some of them were extended to underived transitive (causative) use; and that a competing reflexive form, coined on the model of the transitive pattern, was then innovated for self-induced manner of motion. As far as verbs of manner of motion are covered in descriptions of Soso, they exhibit the same characteristics as in Jalonke. For Soso *nyèrè* ‘walk’, Friedländer (1974) states a variation between intransitive and reflexive uses. The cognate Jalonke verb *jɛrɛ* ‘walk’ also has an intransitive use in Jalonke, although not in its manner of motion sense, but only in the idiom *A jɛr-ɛɛ?* ‘Is everything alright/Are things going (lit.: 3SG walk-IPFV)?’ that is most probable a direct calque from French ‘Ça va?’. Since reflexive-only verbs of manner of motion in Jalonke only have related intransitive senses, as is the case of *xu-lun* and *mafuraa* ‘hurry’ and *jɛrɛ* ‘walk’, but no transitive senses, Grégoire’s hypothesis that reflexive verbs of manner of motion arise out of transitive verbs cannot be applied to Jalonke. The extent of and motivation for the considerable variability in argument structure for verbs of manner of motion in CM languages demands further investigation.

6.3.1.2. EVENT STRUCTURE AND LEXICAL ASPECT OF REFLEXIVE-ONLY MANNER VERBS

As to their event structure and lexical aspect, some reflexive-only verbs of Jalonke are manner or process verbs and thus share the event structure of intransitive (3.3) and transitive (see 4.3) manner verbs. These verbs comprise verbs of manner of motion – they lexicalize manner, but not Path of motion, as illustrated by (24). The verbs in question can appear as manner adjuncts of verbs of directed motion, as shown in (31).

- (30) *Haamidu a jɛr -ɛɛ taa -na kwi.*
 Haamidu 3SG walk -IPFV village -DEF in
 ‘Haamidu is walking in the village.’
 *‘Haamidu is walking **into** the village.’

- (31) *Mariama mɛn faa a gii ra.*
 Mariama yet come 3SG run with
 ‘Mariama came again running (lit.: her).’

Cooking 002

LEXICAL ARGUMENT STRUCTURE – REFLEXIVE-ONLY VERBS

If these verbs are marked for imperfective, the events they denote are pictured as realized, as illustrated by the result realization-under-cessation test (cf. 1.8.4.3) for the sentence (30) above in (32).

- (32) *A banta a jɛɛ.*
 3SG PF 3SG walk
 ‘He has (already) walked.’

6.3.2. REFLEXIVE-ONLY RESULT VERBS

6.3.2.1. MEMBERS OF THE CLASS OF REFLEXIVE-ONLY RESULT VERBS

Among the reflexive-only verbs of change in Jalonke are also verbs that encode inherently directed motion (or translational motion in Kemmer’s and Klaiman’s terminology), listed in Table 2. The class further comprises verbs of cognition, perception and emotion, listed in Table 3.

Table 2 : All reflexive-only verbs of directed motion in Jalonke

<i>gulen</i>	‘return’
<i>sonsɔnkɔli</i>	‘squat, crouch’
<i>tala</i>	‘escape’
<i>telen</i>	‘turn towards, direct’ ⁴
<i>xete</i>	‘return’
<i>ximbisin</i>	‘kneel’

Table 3: All reflexive-only verbs of cognition, emotion and perception in Jalonke

<i>jaa-xani</i>	‘perceive (lit.: eye-send)’
<i>ma-naxun</i>	‘think of (lit.: DISTR-be sweet)’
<i>tuli-tii</i>	‘prick (up) one’s ears (lit.: ear-stand up)’
<i>xara i</i>	‘be silent, patient’

A group of verbs of ingesting is also attested in the class. These verbs are listed in Table 4:

⁴ Telen ‘turn towards’ is attested as a preposition with the meaning ‘du côté de, aux environs de, vers, dans le domaine de’ in the Fula dialect of the Futa Jalon (Diallo 2000). Its use as a postposition is not recorded in Jalonke.

CHAPTER 6

Table 4: All reflexive-only verbs of ingesting in Jalonke

<i>fereɲensee</i>	‘lunch (lit.: afternoon-thing)’
<i>deɛge</i>	‘snack (lit.: mouth-?)’
<i>deɛibaa</i>	‘breakfast (lit.: mouth-IT-extract)’
<i>kɔʝebaa</i>	‘breakfast (lit.: ?-extract)’
<i>xiisee</i>	‘dine (lit.: sleep-thing)’

The remaining two reflexive-only verbs of Jalonke are given in Table 5.

Table 5: The two other reflexive-only verbs in Jalonke

<i>jungu</i>	‘say good-bye’
<i>tewi</i>	‘do deliberately’

6.3.2.2. EVENT STRUCTURE AND LEXICAL ASPECT OF REFLEXIVE-ONLY RESULT VERBS

Reflexive-only result verbs instantiate the even structure template for simple state changes without a manner subevent introduced in 3.4. In keeping with their telic nature, the events denoted by the verbs are not realized when the verbs occur in the imperfective, as illustrated by the answer to the realization-under cessation test (cf. 1.8.4.3) for (33) in (34):

- (33) *A a ximbisin -ma.*
 3SG 3SG kneel -IPFV
 ‘He is kneeling.’

- (34) *A mɛn m' aa ximbisin.*
 3SG yet NEG 3SG kneel
 ‘He hasn’t knelt yet.’

To my knowledge, two of the verbs, *gulen* and *xɛɛ*, are synonyms. They both mean ‘return’ and are used in the same contexts:

- (35) *N an gulen xɛɛ -n' ii.*
 1SG 1SG return field -DEF at
 ‘I returned to the field.’

LEXICAL ARGUMENT STRUCTURE – REFLEXIVE-ONLY VERBS

- (36) *N an xεte xεε -n' ii.*
 1SG 1SG return field -DEF at
 'I returned to the field.'

Ximbisin 'kneel' diachronically most plausibly was a transitive verb that consisted of a cognate of the verb *sin* 'turn to, orient' attested in synchronic Bambara (Bailleul 1996) plus the body part *ximbi* 'knee' still attested as a noun in Jalonke. The possessed body part noun lost its definite marking, was incorporated into the verb, and the possessive pronoun became headless, as it were. Similar developments are present with the verbs of perception *tuli-tii* 'prick (up) one's ears (lit.: ear-stand up)' and *jaa-xani* 'perceive (lit.:eye-send/bring)'. Both verbs are compounds and feature incorporated objects: these never appear with the definite marker and cannot be modified. The synchronic coreferential object pronoun is most likely the remnant of a former possessive NP in object position, thus a sentence (37) in resulted in a structure like (38):

- (37) (reconstructed) *N an jaa -na xani a ma*
 1SG 1SG eye -DEF send 3SG at
 'I perceived it (lit: I brought my eyes to it.)'

- (38) *E banta e jaa- xani xuun -εε ma.*
 3PL PF 3PL eye- send frog -DEF at
 'They have (already) seen the frog.' Frog-Alpha 042

It is likely that most of the verbs of ingesting lexicalized as reflexive-only verbs of Jalonke have developed out of transitive verbs as well. Most reflexive-only verbs, however, are simplex verbs and do not fit into the incorporation-scenario. It is possible that the simplex verbs started entering the class of reflexive-only verbs on the example of the incorporating verbs of similar semantic domains. A different scenario seems also plausible, however. According to Arnott (1956, 1970), the semantic domains that occur as reflexive-only verbs of Jalonke are attested as semantic domains for verbs exclusively occurring in the middle voice in Gombe Fula, a Nigerian dialect of Fula. Arnott gives as overarching property for this class in Fula that the verbs are "associated with certain kinds of deliberate bodily or mental activity" (1956: 144). At the same time Arnott mentions that verbs of similar domains denoting involuntary actions belong to the active class. Since Jalonke speakers have been bilingual in Fula for centuries, a contact phenomenon cannot be ruled out. Unfortunately, no data on middle verbs for the Fula variety of the

CHAPTER 6

Futa Jalon are available, and hence the origin of the class of reflexive-only verbs in Jalonke cannot be resolved here.

6.4. SUMMARY

This chapter has been concerned with a group of verbs that occur only reflexively. Although the verbs in question are uncaused verbs (cf. 7.3.1.5), they are differentiated from intransitive uncaused caused verbs through the characteristic that they denote controlled eventualities. The feature of control, along with a different possible motivation for the class in terms of ‘low elaboration’ has been introduced in 6.2. In section 6.3, the control hypothesis has been put to the test and it has been shown that these verbs are always controlled and that this feature also differentiates them from intransitive verbs. Reflexive-only verbs comprise processes or manner verbs, which have been discussed in 6.3.1, and result verbs or verbs of pure change of state, which have been addressed in 6.3.2. It has been shown that reflexive-only verbs cross-cut the lexical organization of Jalonke in terms of argument structure class because they are, unlike intransitive and transitive verbs, not motivated by the large bifurcation of presence or absence of an external cause. Rather, a positive specification for control underlies this class. With respect to the feature external cause, reflexive-only verbs pattern with intransitive verbs and are distinguished from externally caused or base transitive verbs. With respect to the number of syntactically present participants, reflexive-only verbs pattern with transitive verbs.

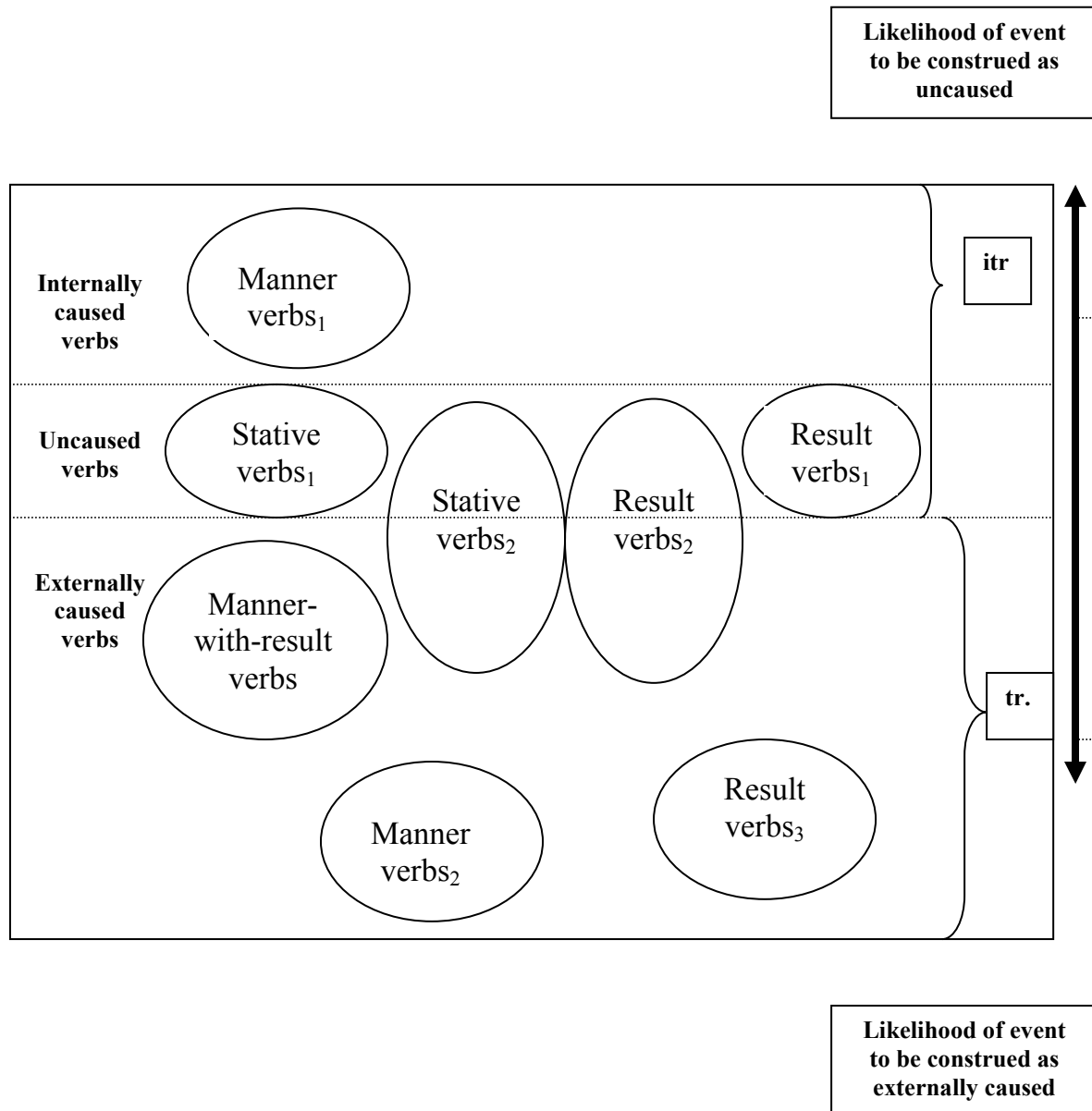
6.5. SUMMARY OF CHAPTERS 3-6

In chapter 3, it has been shown that intransitive verbs belong to the causation types of internally caused and uncaused verbs. Transitive verbs, in contrast, exclusively lexicalize externally caused events, as discussed in chapter 4. Causative/inchoative alternating verbs have two argument structure options. These verbs, examined in chapter 5, can have an uncaused intransitive argument structure and an externally caused transitive argument structure. Temporal properties cross-cut the causation types and argument structure classes, although there are tendencies for certain temporal event structure types to be predominantly associated with one argument structure class. Thus, manner verbs are attested as intransitive and transitive verbs, but not as causative/inchoative alternating verbs. Stative verbs with state change extensions have been shown to occur as intransitive and causative/inchoative alternating verbs, but not as exclusively transitive verbs. Pure verbs of change of state or result verbs can appear as intransitive, causative/inchoative alternating, and – cross-linguistically not predicted – transitive verbs. Verbs lexicalizing both manner

LEXICAL ARGUMENT STRUCTURE – REFLEXIVE-ONLY VERBS

and result of a change of state are uniquely attested as transitive. Figure 1 illustrates the temporal event structure classes and which causation type they instantiate. Event structure types that occur in different argument structure classes appear in several ovals and are numbered in order to avoid confusion, i.e. manner verbs₁ correspond to internally caused and hence intransitive verbs; and manner verbs₂ correspond to externally caused and therefore transitive verbs. The correspondence of causation types and temporal event structure types to argument structure classes is indicated through brackets; causative/inchoative alternating verbs (stative verbs₂ and result verbs₂) are those verbs at the overlap between intransitive and transitive verbs. These two features are complemented by the feature ‘likelihood of the event to be construed as uncaused’.

Figure 1: Temporal event structure classes for intransitive, transitive, and causative/inchoative alternating verbs, their causation types, and the likelihood of the event to be construed as uncaused



Internally caused verbs by definition cannot be construed as directly externally caused, since they appear with a participant intrinsically involved in bringing about the event denoted by the verb. Consequently, these verbs in Jalonke are intransitive. The class of internally caused verbs coincides with the class intransitive manner verbs (manner verbs₁) in Jalonke. If manner verbs are not internally caused, they have an exclusively transitive argument structure (manner verbs₂). Manner-with-result verbs, on the other end of the cline, can only be construed as externally caused, since the presence of a manner component presupposes the existence of an

external Effector handling it. The likelihood of an event to be construed as uncaused vs. as externally caused is, however, crucial for event structure classes that can appear in different argument structure classes and thus instantiate two causation types. For these verbs, stative and result verbs in Jalonke, it is assumed that the likelihood of the event to be construed as externally caused vs. uncaused is the criterion that determines whether the verbs are lexicalized as intransitive-only (stative verbs₁ and result verbs₁), transitive-only (result verbs₃) or causative/inchoative alternating (stative verbs₂ and result verbs₂, visualized in Figure 1 through the overlap between transitive and intransitive). This criterion is not expected to rely on the nature of the event denoted by the verb, but on the language-particular construal of that event. For Jalonke, we find 37 uniquely intransitive result verbs in the lexicon so far. Exclusively transitive result verbs (non-existent in English) are scarce – only 12 of them are attested. 18 Jalonke result verbs belong to the class of causative/inchoative alternating verbs. For stative verbs, the picture looks as follows. 70 stative verbs with state-change readings are lexicalized as intransitive verbs. 5 of these verbs belong to the class of causative/inchoative alternating verbs. Thus, there seems to be a clear language-particular preference to realize stative verbs preferably in intransitive verbs, or to view the events denoted by these verbs as highly unlikely to be brought about by an external force. For Jalonke result verbs, a less clear picture emerges. Counter cross-linguistic expectations (Haspelmath 1993, Guerssel, Hale, Laughren, Levin & White Eagle 1985, Levin 1993, Levin & Rappaport Hovav 1995), there are exclusively transitive result verbs in Jalonke. Although it is beyond the scope of the present study to determine what motivates the cut-off points between intransitive, causative/inchoative alternating, and transitive result verbs, it seems safe to assume that the very existence of a class of transitive result verbs is due to the fundamental transitive character of Jalonke. The general preference of Jalonke to lexicalize events in transitive verbs can be captured in percentages. More than half of the verbal lexicon established so far, or 52.8%, consists of transitive verbs. Only 36% of Jalonke verbs are lexicalized as intransitive verbs; 5.7% have a reflexive-only argument structure; and 5.5% of verbs are causative/inchoative alternating and allow both transitive and intransitive uses. These findings show that, at least with respect to preferred lexicalization patterns of events in verbs, Jalonke has to be considered a fundamentally transitive language in the sense of Nichols (1981, 1982, 1993, Nichols *et al* 1999).

The following chapter has morphosyntactic and morpholexical operations as its focus. The chapter looks at processes that alter the valence and/or meaning of a verb. The combinatory possibilities and meanings resulting from these operations further

CHAPTER 6

corroborate the argument structure classes established in this and the previous three chapters.

7. MORPHOLEXICAL AND MORPHOSYNTACTIC OPERATIONS

CHAPTER 7

7.1. INTRODUCTION

This chapter investigates how the meaning and/or valence of verbs are changed in Jalonke. A broad distinction between morphosyntactic and morpholexical operations, whose characteristics are summarized in 7.2, is made. The distinction between morphosyntactic and morpholexical operation cross-cuts another possible distinction in terms of formally marked and non-marked operations. Table 1 summarizes the attested operations and their marking. Section 7.3 is dedicated to the morphosyntactic operations of Jalonke, which comprise the causative derivation, treated in 7.3.1, and the passive alternation, addressed in 7.3.2. Because of its cross-linguistic oddity, the passive alternation receives more attention than other valence- or meaning-changing processes, and comparisons to other CM languages are made in 7.3.2.1. Section 7.4 is concerned with morpholexical operations. This more restricted operation type comprises the distributive derivation, introduced in 7.4.1, the iterative derivation, looked at in 7.4.2, the unexpressed object alternation, treated in 7.4.3, and the applicative alternation, examined in 7.4.4. The different operations have their own summary section, and a general summary (7.5) ends the chapter.

Table 1: Overview of morphosyntactic and morpholexical operations in Jalonke and the ways they are marked

	Morphosyntactic operations	Morpholexical operations
Formally marked	Causative derivation (<i>ra-</i>)	Distributive derivation (<i>ma-</i>)
		Iterative derivation (<i>i-</i>)
Not formally marked	Passive alternation	Unexpressed object alternation
		Applicative alternation

7.2. MORPHOSYNTACTIC AND MORPHOLEXICAL OPERATIONS AS ACCESSING DIFFERENT LEVELS OF INFORMATION

This chapter introduces a number of processes that change either the meaning of a verb or alter its valence, i.e. the number or position of its syntactically present arguments, or both. As laid out in more detail in 1.7.2.4, I follow a distinction introduced by Ackerman (1992) and built upon by Sadler & Spencer (1998) and implicitly also by Levin & Rappaport Hovav (1998). This distinction draws on the kinds of information to which these processes are sensitive.

Morphosyntactic operations do not need to access information at the event structure level. They blindly apply to all verbs whose argument structure, i.e. the number and prominence relations of arguments, fulfils the relevant criteria. Morphosyntactic operations in Jalonke are the causative derivation and the passive alternation.

Morpholexical operations necessarily access information present in a verb's event structure. These operations comprise the distributive derivation, the iterative derivation, the unexpressed object alternation, and the applicative alternation of Jalonke. The causative/inchoative alternation qualifies as a morpholexical operation, too, but because of the ambiguity of the intransitive alternants, the verbs participating in this alternation have been treated in their own right in chapter 5.

7.3. MORPHOSYNTACTIC OPERATIONS

7.3.1. CAUSATIVE DERIVATION

This section is concerned with one of the means for expressing causation in Jalonke. First, it has to be remarked that linguistic causation is not equivalent to physical causation. Not everything that is attributed a cause in the physical world needs to be expressed in a causative construction – in Talmy's (2000) terms, it can also be construed as an 'autonomous event'. Following Shibatani (1976), Comrie (1981) and Talmy (2000), linguistic causation, or in their terms a 'causative situation' is present when a sentence can be analyzed as encoding at least two events, a causing event and a resulting or caused event in most cases expressing a change of state. Crucial in establishing a causal relation between the two events is that the bringing about of the result state is construed as wholly dependent on the occurrence of the causing event.

It is well known that causative situations can vary according to several parameters, among them the directness of causation and the degree of control or activity retained by the Causee or Affectee¹ (cf. *I made him blush* vs. *I opened the can*). These parameters are at least partially reflected in the formal means which languages employ to encode causal relations. Thus, the following correspondences are observed:

- (i) Directness of causation and no retention of control by the Causee correspond to a high degree of fusion between the two subevents.
- (ii) Indirectness of causation and retention of some control by the Causee result in a looser connection between the two subevents.
- (iii) The interpretation of complex forms to express causal relations depends on the availability of simpler means to express these.

The following paragraphs illustrate these correspondences:

(i) Directness of causation and no retention of control by the Causee correspond to a high degree of fusion between the two subevents. ‘Maximal conceptual closeness’ as Kemmer & Verhagen (1994) frame it, corresponds to a high degree of fusion between the two subevents. Often, situations viewed as highly fused are encoded in lexical causative verbs. The Jalonke verb *don* ‘eat’, for example, encodes both the causing and the caused subevents in one lexical root and implicates directness of causation. Moreover, the Causee exercises absolutely no control over the caused subevent.

(ii) Indirectness of causation and retention of some control by the Causee result in a looser connection between the two subevents. Greater distance between the two subevents or a retention of control on behalf of the Causee is mirrored in a looser connection between them. Thus, the verb *jele* ‘laugh’ may be morphologically causativized and yield *ra-jele* ‘CAUS-laugh’. Causation in this case cannot be direct, because the Causee is actively involved in bringing about the caused subevent. This less tight connection between the two subevents is mirrored in greater morphological complexity, signaled by the causative marker *ra-*.

¹ Following Comrie (1985), and in contrast to Kemmer & Verhagen (1994), I use the term *Causee* to refer to the first participant of the caused subevent, not to its second participant. The second participant of the caused subevent, the one undergoing a change of state/location or otherwise affected, is here called *Affectee*. The participant standing for the causing subevent or CAUSE element is labeled the *Causer*.

(iii) **The interpretation of complex forms to express causal relations depends on the availability of simpler means to express these.** If more complex means of expressing causality are available in a language, simple forms implicate directness of causation through heuristics based on the Gricean maxim of quantity (‘What isn’t said, isn’t’). Complex forms, in contrast, then implicate indirectness of causation through heuristics based on the Gricean maxim of manner (‘What’s said in an abnormal way isn’t normal’) (Levinson 2000: 35-38). In Jalonke, for instance, a lexically causative verb root *bira* ‘fall’ exists. Accordingly, the morphological causative *ra-bira* ‘CAUS-fall’ indicates that causation in this case was not direct.

True to the fundamentally transitive character of Jalonke more than half of the simplex verb roots in the lexicon consists of causative or base transitive verbs, treated in chapter 4. These verb roots are lexically causative, although not all of them are verbs of change of state. Causative situations can also be created through morphological means – the Jalonke causative marker *ra*. Where these more complex forms compete with simplex forms, they give rise to different inferences, generally implicating indirectness of causation.

Lexical causative verbs, and morphological and periphrastic causative constructions are usually at the center of linguistic investigations of causality, but other means of expressing causality exist as well. Thus, causal relations can be established by subordinating conjunctions like English *because*. Causal relations can also be encoded by resultative constructions, if languages have them, such as English *She kicked the door shut*. Finally, causal relations do not have to be linguistically coded at all, but can be left to implicature, as in English *I sneezed. The papers flew from the table*. Of these means, two are attested in Jalonke. Causal relations can be signaled by the conjunction *haa* ‘until’ or by *nan ma fee ra* ‘because (lit.: FOC POSS thing with)’. In (1), a subordinate clause with *haa* ‘until’ expresses the result state reached by means of an activity in the matrix clause. In (2), ‘because’ establishes a causal link between the events expressed in two clauses.

- (1) *E a ma- xaa haa a fixe.*
 3PL 3SG DISTR wash until 3SG be clean
 ‘They washed it (the cow) until it was clean.’

Fuurunna 074

MORPHOSYNTACTIC AND MORPHOLEXICAL OPERATIONS

- (2) *A xure -jee -na min. Nan ma fee ra, a tuu.*
 3SG stream -water DEF drink. FOC POSS thing with 3SG die
 ‘She drank stream water. Because of that, she died.’

By far the most prevalent strategy of expressing causal relations in Jalonke discourse is by implicature,² i.e. the mere juxtaposition of two clauses allows the inference that they are causally related. The following example is the description of a video stimulus in which a circle bumps into a square, causing it to move:

- (3) *A karton -na din, karton -na siga jii -fan -na xən.*
 3SG box -DEF hit box -DEF go hand be nice -DEF at
 ‘It hit the box, the box went to the right.’ ECOM A5-MAB

In the stimulus, the circle directly causes the square to move by hitting it – this direct causative situation can, however, only be implicated from the example.

In another example, somebody kills a snake by hitting it with a stone. Again, implicature is used to relate the causing subevent and the change of state subevent:

- (4) *N saŋ -εε lii, n a gənə, a tuu.*
 1SG snake -DEF find 1SG 3SG hit 3SG die
 ‘I found a snake, I hit it, it died.’ Dahl 157 AB

In the following, only the morphological causative will be investigated, since the valence increase and meaning of verbs in combinations with it serves to confirm the argument structure classes established in the previous four chapters.

7.3.1.1. THE CAUSATIVE MARKER RA-

A large number of bases admit the derivational causative prefix *ra-*, which forms morphological causatives:³

² *Implicature seems to be cross-linguistically recurrent in the expression of causal relations: in a cross-linguistic project on the linguistic encoding of causality (Bohnenmeyer & Majid 2002) at the MPI Nijmegen, implicature turned out to be the preferred strategy in (narrative) discourse throughout most of the investigated languages, independently of their means for expressing causal relations.*

³ *Ra- is also attested for Soso, although the two sources on Soso do not agree on its semantics: Houis (1963: 70) ascribes it “une valeur d’intentionnel”, but among the examples he gives are many that look causative, like bàràbàrà ‘boil’ – rá-bàràbàrà ‘make boil’. Friedländer (1974) calls ra- a causative marker. In other Central Mande languages, the*

CHAPTER 7

- (5) *N a ra- gulen xεε -n' ii.*
 1SG 3SG CAUS- return field -DEF at
 'I made him return to the field.'

The marker is homophonous to the instrumental postposition *ra* exemplified in (6), but unlike the instrumental is a bound morpheme.

- (6) *A luti -n' i- bolon sizoo -nee ra.*
 3SG cord -DEF IT- cut scissor -DEF.PL with
 'He cut the cord with the scissors.' Cut&Break-SB 24

According to Comrie (1981), Kemmer & Verhagen (1994), and Song (1990), it is cross-linguistically very common to find similarities between causative and instrumental markers. It is thus not implausible to speculate that the causative prefix *ra-* originates in the instrumental postposition *ra* 'with'. Similar grammaticalization scenarios are plausible for the other verbal derivational prefixes, *ma-* and *i-*, which are also homophonous to postpositions. The verification of this possible grammaticalization scenario remains a subject of future research. It is, however, plausible that, as cross-linguistically attested (e.g. in Germanic, Slavic, and Bantu languages), a development from adposition to preverb took place in all three cases.

The causative prefix is the most productive derivational verbal affix: 81% of the 152 intransitive verb roots, 69.9% of the 223 transitive verb roots, and all of the 23 causative/inchoative verb roots with the exception of *ra-bii* 'open', and 56% of the 24 reflexive-only verb roots in the Jalonke lexicon admit it. Verbs which are incompatible with the morphological causative fall into two different categories: some of them are synchronically inanalyzable verbs that were diachronically derived, like the forms beginning in *ma-* in (7) and (8), or compound, like the form beginning with *xun-* 'head' in (9). Since Jalonke only allows one derivational affix per verb, and since these verbs lack a corresponding semantically related simplex form, their morphological causativization is blocked:⁴

cognate prefix la- has causative semantics (cf. Dumestre 1994 on Bambara), making a causative analysis more probable for Soso.

⁴ *Houis (1963) reports for Soso that the combination of ma- and ra- is possible, like in the noun ma-ra-si 'advice'. The corresponding Jalonke verb is ra-sii 'advise', with the nominal form maa-ra-sii 'advice'. Because the maa in these contexts always contains a geminated vowel and since transitive verbs always incorporate their object in nominalizations like these, I analyze maa as the archaic noun for 'person', occasionally attested as a free noun, too.*

MORPHOSYNTACTIC AND MORPHOLEXICAL OPERATIONS

- | | | |
|-----|------------------------------|---------------------------------------|
| (7) | <i>matii</i>
'sell' | <i>*ra-matii</i>
'make sell' |
| (8) | <i>makɔrɛɛ</i>
'approach' | <i>*ra-makɔrɛɛ</i>
'make approach' |
| (9) | <i>xuɲibaa</i>
'expose' | <i>*ra-xuɲibaa</i>
'make expose' |

Some simplex roots do not admit morphological causativization, but have a non-suppletive causative form that is irregular, e.g. formed by means of the normally distributive prefix *ma-*:

- | | | | |
|------|---------------------------------|-----------------------------------|------------------------------------|
| (10) | <i>xunu</i>
'wake up (itr.)' | <i>ma-xunu</i>
'wake up (tr.)' | <i>*ra-xunu</i>
'wake up (tr.)' |
|------|---------------------------------|-----------------------------------|------------------------------------|

There are also verbs whose meaning with the morphological causative is lexicalized (11), (12) or whose causativized form has, apart from its compositional meaning, acquired additional readings (13).

- | | | |
|------|------------------------|--|
| (11) | <i>tuu</i>
'die' | <i>ra-tuu</i>
'remember' |
| (12) | <i>mɛɛ</i>
'hear' | <i>ra-mɛɛ</i>
'listen, understand' |
| (13) | <i>fala</i>
'speak' | <i>ra-fala</i>
'make speak'
'repair' |

For the majority of verbs, though, the meaning in combination with the causative marker *ra-* is predictable. These verbs are addressed, according to their argument structure properties, in the following sections.

7.3.1.2. CAUSATIVES FROM INTRANSITIVE VERBS

All the non-alternating intransitive verbs (with two exceptions treated in the context of the applicative alternation in 7.4.4 below) introduced in chapter 3 need to be morphologically causativized in order to denote an externally caused event. The

CHAPTER 7

causativization of base intransitives results in an increase in valence: the Causer occupies subject position, and the Causee appears in object position, as exemplified for the morphological causative of intransitive verb *mini* ‘exit’:

- (14) *Maimuna mini -xi nde...*
 Maimuna exit -PF INACT
 ‘Maimuna had gone out...’ Labe 211

- (15) *Awa, balon -na, e a ra- mini, ...*
 well ball -DEF 3PL 3SG CAUS- exit
 ‘Well, the ball, they took it out/made it get out...’ Soccer 2 036

7.3.1.2.1. CAUSATIVES FROM INTERNALLY CAUSED VERBS

As mentioned in chapter 3, there is a difference in meaning for intransitive verbs with the morphological causative depending on whether they denote internally caused or uncaused events. For the internally caused verbs, the event in question is always construed as internally caused by their single participant. Consequently, an added external cause can only induce a state-change that is still internally caused by the Causee. The morphological causative and its meaning for internally caused intransitives is illustrated in (16) for *jele* ‘laugh’, in (17) for *sɔnxɔ* ‘shout, scream’, and in (18) for *suurun* ‘skid, slip, slide, glide’. In all cases, the Causee retains a degree of activity that is intrinsically linked to him alone having the necessary capacities of bringing about the caused event.

- (16) *N Aissatu ra- jele.*
 1SG Aissatu CAUS- laugh
 ‘I made Aissatu laugh.’
- (17) *N dii -dii -na ra- sɔnxɔ.*
 1SG child -DIM -DEF CAUS- scream
 ‘I made the baby scream.’
- (18) *Geme -nee Haamidu ra- suurun.*
 rock -DEF.PL Haamidu CAUS- slide
 ‘The rocks made Haamidu slide.’

Even for a scenario in which a human Effector causes an event of manner of motion, the caused subevent can only ever be construed as indirectly caused by the Causer if the verb in question is internally caused. Take the Jalonke verb *ra-suurun* ‘CAUS-slide’ for instance. It is impossible to use this causativized verb with reference to a scenario where somebody slides a small child over a smooth surface. The event denoted by the corresponding verbs *ra-suurun* ‘CAUS-slide’ can only be construed as indirectly caused, that is, as ultimately set off by the Causee who has to internally cause the caused subevent. This means that the event can be construed as occurring because the Causer e.g. encouraged, convinced, or forced the Causee to slide across a surface but not that (s)he retains the control over the caused subevent, as would be the case in direct causation. At the same time, the verb *ra-suurun* ‘CAUS-slide’ is not used with inanimate Causees for which a direct causation scenario would be likely – in order to describe scenarios with inanimate Causees, a Jalonke speaker would make a different lexical choice, using the transitive verb *xəreidin* ‘push’ instead of *ra-suurun* ‘CAUS-glide’, and hence focus on the presence of direct external causation rather than on the specific manner of the caused subevent.

7.3.1.2.2. CAUSATIVES FROM UNCAUSED VERBS

For uncaused intransitive verbs, the meaning of the verb in combination with the causative marker is in most cases undetermined between direct and indirect causation. This indeterminacy becomes evident from examples (19) and (20), featuring the morphological causatives of *mini* ‘exit’ and *xuben* ‘go out, go dark, die (of fires)’ respectively.

- (19) *N Haamidu ra -mini.*
 1SG Haamidu CAUS- exit
 ‘I took Haamidu out. (lit.: exited Haamidu)’
 ‘I made Haamidu exit.’

- (20) *N tɛɛ -na ‘a- xuben.*
 1SG fire -DEF CAUS- go out
 ‘I extinguished the fire.’
 ‘I made the fire get out.’

7.3.1.3. CAUSATIVES FROM TRANSITIVE VERBS

Base transitive verbs, lexically denoting externally caused events, are presumed to already have a CAUSE element in their event structure. As such, they only occur with the causative marker when a Causee who acts on an Affectee is introduced.

CHAPTER 7

This additional subevent increases the valence of the already transitive clause by one. Although the possibility of morphological causativization is in general open to all base transitives, it is only marginally attested in discourse – morphological causatives from transitive verbs are generally dispreferred, and the expression of causal relations involving transitive verbs is almost always left to implicature. A fully elaborated causative from a transitive verb expresses the Causer in the subject, the Causee in the object and the Affectee in a PP headed by *ra* ‘with’.⁵ Example (21) shows a clause featuring the transitive verb *baa* ‘extract, draw (water)’, (22) the morphological causative of that verb.

- (21) *Huleymatu jee -na baa.*
 Huleymatu water -DEF extract
 ‘Huleymatu drew water.’

- (22) *N Huleymatu ra- baa jee -na ‘a.*
 1SG Huleymatu CAUS- extract water -DEF with
 ‘I made Huleymatu draw water.’

It is ungrammatical to suppress the Causee:

- (23) **N jee -na ‘a- baa.*
 1SG water -DEF CAUS- extract
 * ‘I had water drawn.’

It is equally ungrammatical to eliminate the Affectee:

- (24) **N Huleymatu ra- -baa.*
 1SG Huleymatu CAUS- remove
 * ‘I made Huleymatu remove/draw.’

Morphological causatives of transitive verbs which might be said to be three-place verbs (cf. 4.6) are attested. The causative doesn’t lead to a valence increase for these verbs, however – the participant of the base verb that is realized in a PP and

⁵ *In this respect, Jalonke deviates from the cross-linguistic tendency observed by Comrie (1985) to encode the Causee, linked to subject with the base verb, as the indirect or oblique object and to maintain the direct object of the base verb, i.e. the Affectee, in direct or oblique object position. But see Alsina & Joshi (1991) for a different proposal considering two semantic parameters that determine the linking of the Causee.*

syntactically optional, as in (25) is not syntactically expressed in the clause with the derived verb (26):

- (25) *Haamidu gul -εε fala (Mariama bε).*
 Haamidu lie -DEF say (Mariama for)
 ‘Haamidu lied (lit.: said the lie) to Mariama.’

- (26) *N Haamidu ra- fala gule -na ‘a *(Mariama bε).*
 1SG Haamidu CAUS- say lie -DEF with * (Mariama for)
 ‘I made Haamidu lie (lit.: say a lie) *(to Mariama).’

7.3.1.4. CAUSATIVES FROM CAUSATIVE/INCHOATIVE ALTERNATING VERBS

For the verbs that participate in the causative/inchoative alternation, the different behavior of the alternants in combination with the morphological causative strengthens the admission of two different readings. As was already mentioned in chapter 5, causative/inchoative verbs have a transitive use, and like all transitive verbs, can passivize. These verbs also have an intransitive use, in which the event denoted by the verbs is construed as occurring spontaneously or uncaused. Consequently, an intransitive clause featuring a causative/inchoative alternating verb is ambiguous between a spontaneous and a passive reading. If causative/inchoative alternating verbs express their external cause through the transitive alternant, direct or unmediated causation is expressed (27).

- (27) *Haamidu tam -εε gira.*
 Haamidu stick -DEF break
 ‘Haamidu broke the stick.’

If *ra-* is prefixed to the transitive causative alternant of these verbs, their parallels with non-alternating transitive verbs become obvious. As for the other transitive verbs, a Causer argument is added, and the subject of the base verb is turned into the Causee, linked to object, while the object of the base verb is turned into the Affectee, realized in a PP:

- (28) *N Haamidu ra- gira tami -na ‘a.*
 1SG Haamidu CAUS- break stick -DEF with
 ‘I made Haamidu break the stick.’

CHAPTER 7

If *ra-* is prefixed to the intransitive inchoative variant of these verbs (29), again, the resulting change in valence corresponds to the one observed for non-alternating intransitive verbs: the valence of the clause is increased by one, resulting in a transitive clause (30):

- (29) *Tam* *-εε* *gira*.
 stick -DEF break
 ‘The stick broke.’

- (30) *Haamidu* *tam* *-εε* *ra-* *gira*.
 Haamidu stick -DEF CAUS- break
 ‘Haamidu made the stick break.’

The indirectness of causation for (30) is due to Gricean maxims: since a less complex way of expressing causation exists through the simplex verb *gira* ‘break, crush’ (cf. (27) above), the more complex form in (30) implicates an ‘abnormal’ way of causation. In the case of (30), this means that the Causer did not take the stick into his hands, as would be the canonical way to break a stick in Jalonke culture, but performed a different action – he maybe trodded on it, he maybe threw a stone at it, etc.

7.3.1.5. CAUSATIVES FROM REFLEXIVE-ONLY VERBS

Although reflexive-only verbs are transitive with respect to the number of syntactic arguments, these verbs, introduced in chapter 6, pair with intransitive verbs when it comes to causation. Reflexive-only verbs always appear with the causative marker *ra-* when a Causer argument is added. In addition, they do not show the valence increase observable for transitive verbs – just as for their base forms (31), the resulting clause is syntactically transitive (32). The only difference between the two clauses is that in (31), subject and object are obligatorily coreferential, whereas in (32) they are not.

- (31) *Nxo* *nxo* *xεte* *xɔri...*
 1Pl.E 1Pl.E return now
 ‘We returned now...’

Labe 287

- (32) *Peesee* *nan* *nxo* *ra-* *xεte* *-xi* *Labe* *i*.
 PC (président de commune) FOC 1Pl.E CAUS- return -PFV Labe at
 ‘The P.C. has made us return to Labe.’

Pilgrim-Keita 027

MORPHOSYNTACTIC AND MORPHOLEXICAL OPERATIONS

The causativization patterns for these verbs confirm that they denote uncaused events – the morphological causative can express indirect causation, as in (33), but also direct causation, as in (34):

- (33) *E nxo ra- gii haa nxo tagan.*
 3PL 1PL:E CAUS- run until 1PL:E be tired
 ‘They made us run until we were tired.’ Maneah 136

- (34) *A a ra- gii -ma, a veloo -na ‘a- gii -ma...*
 3SG 3SG CAUS- run -IPFV 3SG bicycle -DEF CAUS- run at
 ‘He is riding it (lit.: making it run), he is riding (lit.: making run) the bi-
 cycle.’ Pear-MAB 011

This observation also holds when the Causee is human. The sentence in (35) can both express direct and indirect causation – the latter for instance in the case of somebody sick or being a small child who does not take an active part in the caused subevent.

- (35) *N Haamidu ra- gulen banxi -n’ ii.*
 1SG Haamidu CAUS -return house -DEF at
 ‘I made Haamidu return to the house.’
 ‘I returned Haamidu to the house’

7.3.1.6. SUMMARY ON CAUSATIVE DERIVATION

Table 2 summarizes the options for the verbs of different argument structure classes when combining with the causative marker. The alternants of causative/inchoative verbs are treated along with intransitive and transitive verbs respectively, in order to highlight the parallels in causativization patterns with verbs of these classes.

CHAPTER 7

Table 2: Overview of basic argument structure, causation types and morpho-syntactic properties of Jalonke verbs

	Intransitive verbs, reflexive-only verbs, and inchoative alternants of causative/inchoative alternating verbs	Transitive verbs and causative alternants of causative/inchoative alternating verbs
Causation type	Internally caused/uncaused	Externally caused
Direct external causation	Only for uncaused verbs through causative derivation	Lexically expressed
Indirect external causation	Causative derivation	Causative derivation
Input of causative derivation	Intransitive/reflexive-only verb	Transitive verb
Output of causative derivation	Transitive verb	Expanded transitive verb

The necessity to be morphologically causativized in order to enter transitive clauses corroborates lexically intransitive verbs and reflexive-only verbs as different from transitive verbs. The difference in meaning of the causative marker, signaling mediated causation for internally caused verbs, and not distinguishing between mediated and unmediated causation for uncaused verbs, supports the existence of these two causation types within the class of intransitive verbs.

The capacity to enter transitive clauses in their simplex form is a defining characteristic for the class of transitive verbs. Their argument structure and causation type are in accord with the valence increase induced through their causative derivation – an expanded transitive verb – and the meaning of the causative marker – mediated causation, since the base verb already expresses direct external causation.

The different combinatory possibilities for causative/inchoative verbs with the causative marker and the meaning differences implied are most plausibly explained through the admission of two different alternants for these verbs. For their intransitive inchoative alternants, valence increase and meaning of *ra-* are the same as for non-alternating uncaused intransitive verbs. For the transitive causative alternants of these verbs, valence increase and meaning induced by morphological causativization correspond to the patterns of transitive verbs. Thus, one of the most produc-

tive derivational mechanisms of the language, qualifying as a morphosyntactic operation, confirms the argument structure classes established on the basis of the valence and participant structure of the simplex verbs.

7.3.2. THE PASSIVE ALTERNATION

One of the cross-linguistically most common ways to ‘defocus the agent’ (Shibatani 1985) of a clause is the passive. The issue of its pragmatic motivations and syntactic and morphological properties has received a considerable amount of attention from the early days of transformational grammar on. What I am most concerned about here is one requirement often taken to be definitional for a passive, namely that it has to be formally marked. Consider the Jalonke sentences in (36) and (37), with the relevant clauses in boldface:

- (36) *E a rabaa -ma kii dii e tɛɛ -na masɔɔ?*
 3Pl 3SG do -IPFV how 3SG **fire** **-DEF** **obtain**
 ‘How are they doing it to obtain fire (lit.: they obtain fire)?’ Duli 017

- (37) *Bɔn, xɔri, tɛɛ -na sɔt -ɔɔ kii dii?*
 Bon (French) now **fire** **-DEF** **find** **-IPFV** **how?**
 ‘Well, now, how is the fire being found?’ Duli 005

Example (36) features the lexicalized distributive verb *masɔɔ* ‘obtain, get’, which is a transitive verb and appears in a transitive clause. Example (37) features the corresponding simplex verb *sɔt* ‘find’, also a transitive verb, but this time in an intransitive clause. The decrease in valence for (37) is accompanied by a difference in linking compared to the transitive clause in (36): the Theme, realized as the object of (36), the fire, is linked to subject in (37). No morphological or periphrastic marking distinguishes the two constructions, however. On approaches to the passive that do not insist on its formal marking (most notably Shibatani 1985), the sentence in (37) would meet the criteria for a passive. On approaches to the passive that are more concerned about its formal properties, on the other hand, the Jalonke ‘passive’ would not pass for one, because of the absence of formal marking on the verb. As a starting point for the investigation of the Jalonke construction in question, Shibatani’s definition of a passive is contrasted here with a definition relying more on formal properties, since the construction would qualify as a passive according to a functional, but not to a formal approach.

CHAPTER 7

Shibatani's (1985) catalog of the different parameters that define a passive looks as follows:

- a. Primary pragmatic function: Defocusing of agent.
- b. Semantic properties:
 - (i) Semantic valence: Predicate (agent, patient)
 - (ii) Subject is affected.
- c. Syntactic properties:
 - (i) Syntactic encoding: agent $\rightarrow \emptyset$ (not encoded)
patient \rightarrow subject
 - (ii) Valence of P[redicate]: Active = P/n;
Passive = P/n-1
- d. Morphological property:
 - Active = P;
 - Passive = P[+passive] (Shibatani 1985: 837)

Let us contrast Shibatani's criteria with those suggested by of Dixon & Aikhenvald (1997) for their 'passive derivation', maintained by Dixon & Aikhenvald (2000):

- (a) applies to an underlying transitive clause and forms a derived intransitive;
- (b) the underlying O becomes S of the passive;
- (c) the underlying A argument goes into a peripheral function, being marked by a non-core case, adposition, etc.; this argument can be omitted, although there is always the option of including it;
- (d) there is some explicit formal marking of a passive construction (generally, by a verbal affix or by a periphrastic verbal construction). (Dixon & Aikhenvald 1997: 73)

Both Shibatani's and Dixon & Aikhenvald's approaches adopt prototypical definitions of the construction, but diverge in the scope of the deviations from the prototype they admit. Clashes between the two definitions concern:

- (i) The syntactic expression of the 'Agent'.
- (ii) The presence of formal marking for the construction.

(i) The syntactic expression of the 'Agent'. Shibatani's (1985) definition excludes the optional expression of the 'Agent'. Indeed it has been observed that

even languages that allow agent by-phrases (*The meal was cooked by Sonja*) employ them only marginally. Dixon and Aikhenvald (2000), on the other hand, regard the expression of the ‘Agent’ as essential for a prototypical passive, although they admit constructions that lack criterion (c), the presence of the agent, under the label ‘passive’.

(ii) The presence of formal marking for the construction. Shibatani does not insist on the presence of morphological or periphrastic marking in order to define a construction as a passive. Dixon & Aikhenvald categorically discard constructions that fulfill their criteria (a)-(c), but miss (d), the formal marking. A construction like that would be regarded by them as a “transitive clause in which one core argument need not be accorded surface realisation.” (1997: 74)

Thus, while Shibatani allows slackening all of his criteria, even the presence of an ‘Agent’ and a ‘Patient’, as long as the primary pragmatic function of agent-defocusing is fulfilled, Dixon & Aikhenvald are much more rigid in the range of deviations from their passive prototype. Consequently, Shibatani’s approach considers constructions as passives that would be excluded on Dixon & Aikhenvald’s account. Such constructions comprise passives from intransitives, which pose problems for a promotion-approach, since no promotion of an underlying object to subject occurs, but resemble passives in that the ‘Agent’ is demoted. Other constructions include honorific expressions and potentials, which show functional similarities to passives but do not fit into restricted definitions.

The two different approaches contrasted above reflect in many ways the ongoing debate of what constitutes a passive and what not. Most of these issues are ignored for the purpose of this study. The most crucial divergence between Shibatani’s proposal and most other definitions of passives (e.g. Keenan 1985, Haspelmath 1990, Mel’čuk 1993) for the issue under investigation lies in his acceptance of morphologically unmarked passives. Where morphologically unmarked passives have been put forward for single languages, their identification is never unanimous, and in most cases, either the passive analysis has been discarded (see Haspelmath 1990 as well as Durie 1988 for a discussion of Acehnese) or a formerly misanalyzed passive marker has been noticed (see Hashimoto 1988 for a discussion of Chinese).

So, how to deal best with a language like Jalonke? The language has as construction that is functionally similar to a passive in that it promotes the object of a tran-

CHAPTER 7

sitive verb to subject position, but that exhibits no morphological or periphrastic marking on the verb. The Effector, or A in Dixon's and Comrie's terms, cannot be syntactically present in Jalonke, but can be expressed in a PP in other languages of the group, as illustrated in 7.3.2.1. Nevertheless, the construction in question has not been unanimously identified as a passive by all researchers working on different Mande languages.

Proposals for related languages and different cross-linguistically possible explanations offering alternative analyses include the following:

- (i) Instable valence of transitive verbs
- (ii) Subject drop for transitive verbs
- (iii) Ergative alignment

(i) Instable valence of transitive verbs. Instable valence has been suggested for a number of CM languages closely related to Jalonke (see 7.3.2.1). These accounts treat the 'passive' as a case of unstable valence rather than as an alternation and in consequence question lexical argument structure for these languages.

(ii) Subject drop for transitive verbs. Another possible explanation would be that Jalonke allows subject drop for transitive verbs.

(iii) Ergative alignment. Jalonke has, apart from constituent order, no indices for grammatical relations – not surprising, given the absence of case marking and verbal agreement. An immediately tempting alternative account could thus be to see the Theme as the central participant, since it is the only one that is obligatorily expressed for transitive verbs, and to attribute ergative characteristics to the language. This treatment is also implicit in approaches to other Central Mande languages (see discussion in 7.3.2.1). A confusion over how best to describe similar constructions in Dyirbal has raised a considerable discussion (see Dixon 1972, Comrie 1978, Comrie 1988).

Employing a prototype-approach to the notions of passive and ergative alignment and defining additional markedness criteria, Comrie (1988) suggests distinguishing passives from ergative alignment even in the absence of formal marking:

Three criteria for identifying the two phenomena are suggested: (i) passive and ergative are all alike in that both involve assignment of at least some subject proper-

MORPHOSYNTACTIC AND MORPHOLEXICAL OPERATIONS

ties to the patient rather than the agent although the extent of the assignment is typically greater for the passive; (ii) passive and ergative differ in that the ergative typically involves greater integration of the agent phrase into the syntax of the clause; (iii) passive and ergative differ in terms of markedness – the passive is a marked construction, whereas the ergative is typically an unmarked construction. (1988: 9)

These criteria can also be employed in order to test the other alternative hypotheses: instable valence should be correlated with an unpredictable number of arguments for all verbs. Subject drop, if sensitive to the grammatical relation, should occur with verbs of all argument structure classes. Although most of these predictions will be tested in detail in chapter 9, some observations are in order here in order to account for the ‘passive alternation’ of Jalonke.

For Jalonke, markedness criteria obviously occupy a prominent position among the criteria proposed in Comrie’s catalog. Comrie employs the following four criteria for markedness:

- ‘Raw frequency’, i.e. the less marked, the more frequent the construction should be in texts.
- ‘Formal complexity’, i.e., the more marked form should also be formally more complex.
- ‘Degree of productivity’, i.e. the more basic the construction, the wider should be its distribution over eligible items
- ‘Discourse distribution’, i.e. the more marked the construction, the more it should be reserved to special discourse genres.

Of the four criteria Comrie (1988) gives for markedness, only three are applied here: ‘raw frequency’, ‘degree of productivity’ and ‘discourse distribution’. The criterion ‘formal complexity’ is not applicable because active and passive are not differentiated in terms of formal marking in Jalonke.

As far as **raw frequency** is concerned, the active wins overwhelmingly over the passive. In a study on argument realization presented in detail in chapter 9, it was found that independently of speaker and genre, only 10.8% of all clauses featuring transitive verb tokens were passive clauses; 84.4% of these clauses were active clauses with two realized arguments. (The remainder of clauses contained transitive verb tokens in the unexpressed object alternation or in the imperative). As

CHAPTER 7

Comrie notes, this distribution should be the inverse if we were dealing with ergative alignment. The percentages should also be more randomly distributed if instable valence were at hand. Finally, if subject drop were responsible for the ‘passive’, we would expect it to occur with all argument structure classes. This, as shown in chapter 9 is not the case: intransitive and reflexive-only verbs only ever ‘drop’ an argument when used in the imperative.

The frequency patterns are confirmed by Comrie’s second criterion, **degree of productivity**: Only 81 out of the 276 verb types occurring in the sample appear in the passive. Moreover, of all the tokens of the 20 most transitive verb types in the above mentioned study, roughly 90% are in the active voice (see 9.4.6 for a detailed account). Only a minority of the occurrences of transitive verb types take the passive form. Moreover, only very few verb types occur more often in the passive than in around 10% of cases, but even these verb types still are attested substantially more often in the active than in the passive. This distribution reveals the active voice as the basic one, and the passive as its marked counterpart. Instable valence or subject drop, moreover, should not reveal such clear markedness relations between the possible configurations, but rather rely on discourse context, if exhibiting any regularity.

Coming to Comrie’s third criterion, **discourse distribution**, again we find confirmation for analyzing the passive as the marked voice. Overall, passives account for 5.1% of all transitive verb tokens. Split up according to genres, their distribution looks as follows: transitive verb tokens in the passive occur most often in letters (8% of all tokens), followed by historical narratives (7.3%), personal narratives (7.2%), and speeches (5.6%) – all these genres can be classified as relatively planned, a parameter known to be linked to a high frequency of passives (Ochs 1979). Not surprisingly, the number of passives is considerably lower in relatively unplanned genres: passive tokens account for only 3.2% of transitive tokens in stories, for 2.8% in conversation, for 2.4% in action description, and for only 1.9% in a genre that simulates unplannedness, plays. Again, for an analysis in terms of unstable valence or subject drop, these findings are difficult to explain.

In summary, all three applicable markedness criteria single out the passive as the marked voice for transitive verbs and consequently corroborate the passive analysis for the construction in question.

A further semantic criterion remains to be tested in order to validate the passive analysis. Although Jalonke passives never express the Effector of the underlying active clause syntactically, it should at least be present semantically – otherwise one-place uses of transitive verbs could not be distinguished from the inchoative alternants of causative/inchoative verbs. And indeed, semantic tests (cf. 1.8.4.8) allow us to differentiate between the two constructions. In the following examples, these tests are shown for the transitive verb *jɪn* ‘cook’: In the active clause, Effector and Theme are linked to subject and object respectively (38). For a passive clause of such a transitive verb, an Effector is semantically entailed, and hence the sentence is incompatible with the PP *a kan tagi* ‘by itself’ (literally ‘between its type/owner’) (39). Furthermore, the addition ‘nobody did it’ is unacceptable (40), while the added sentence ‘somebody did it’ is always admitted (41).⁶

- (38) *N band -εε jɪn.*
 1SG food -DEF cook
 ‘I cooked food.’

- (39) *Band -εε jɪn. *a kan tagi*
 food -DEF cook 3SG type middle
 ‘The food cooked. (*by itself)’

- (40) *Band -εε jɪn. *Muxi oo m’ aa jɪn.*
 food -DEF cook person whatever NEG 3SG cook
 ‘The food cooked. *Nobody cooked it.’

- (41) *Band -εε jɪn. !Muxi nda a jɪn.*
 food -DEF cook person some 3SG cook
 ‘The food cooked. !Somebody cooked it.’

The one-place use of the 23 causative/inchoative verbs in the lexicon, as already exemplified in chapter 5, is ambiguous between two readings. An intransitive

⁶ A special case is the verb *faxa* ‘kill’ (already mentioned in [insert cross-reference later], whose passive equivalent *A faxa* ‘He/she was killed’ is compatible with the sentence ‘Nobody (lit. ‘no person’) did it’, but ruled out with the adjunct ‘by itself’. This apparent contradiction between tests can be explained by world view – in Jalonke culture one can be killed without the presence of a (human) instigator; but in these cases, what would be described by ‘die’ in Western culture, can be viewed as being instigated by God, who is not a person, but nevertheless an external – and the only possible – Effector of the underlying active clause.

clause featuring a causative/inchoative alternating verb can be understood as the inchoative reading, with the action encoded by the verb occurring spontaneously. The clause will then be compatible with ‘by itself’. Such an intransitive clause can be equally be understood as the passive of the causative reading, the spontaneous interpretation then being ruled out. This ambiguity is never present for transitive verbs, though – with the exception of five verb types that participate in the unexpressed object alternation introduced in 7.4.3 below, a passive interpretation of an intransitive clause featuring a transitive verb is mandatory.

In addition, the passive is possible for all transitive verbs of Jalonke, including the 5 verbs that participate in the unexpressed object alternation. This productivity makes it a morphosyntactic operation par excellence and at the same time serves to further corroborate the class of transitive verbs – the admissibility of the passive alternation distinguishes them from the other argument structure classes.

7.3.2.1. *SIMILAR CONSTRUCTIONS IN OTHER CENTRAL MANDE LANGUAGES*

In the previous section it has been argued that what distinguishes the Jalonke passive drastically from canonical passives is the absence of any formal marking on the predicate. This observation holds for most other CM languages as well.⁷ Not surprisingly, then, the passive-like construction has led to conflicting analyses for different Mande languages: some researchers, like Kastenholz (1987) for Koranko, Grégoire (1985) for Maninka and Central Mande as a whole and Bergelson (1991) for Bambara ignore the formal ‘abnormality’ and label it a passive. Since these approaches do not comment on the cross-linguistic oddity of an unmarked passive, and since their arguments are similar to mine on Jalonke, they are not presented in detail here. Proponents of the opposite opinion – i.e. that the construction in question is not a passive – include Creissels (1983a, 1991) for Mandinka and Tröbs (1998) for Jeli. Creissels and Tröbs offer different solutions for the problem resulting from their rejection of a passive, namely that of the correspondence of lexical argument structure and argument realization. Creissels denies the very notion of lexical argument structure for Maninka, because he interprets the one-place and two-place uses of transitive verbs as a valence-lability. Tröbs (1998) opts for a separation of valence and lexical argument structure for Jeli. Their arguments merit a deeper inspection since they might offer an alternative solution for the cross-linguistically conspicuous zero-marked passive of Jalonke, too.

⁷ *There are some exceptions in Western Mande: Tigemaxo has developed a passive marker (Blecke 1996), and its close relative Soninke (Diagana 1995) marks the passive through vowel alternations on the verb stem.*

MORPHOSYNTACTIC AND MORPHOLEXICAL OPERATIONS

In his grammar of Mandinka, Creissels (1983a) notes that certain verbs can enter the transitive and the intransitive construction, with a concomitant remapping of semantic roles onto grammatical relations, as in (42) and (43).

- (42) *kè* *-o* *ye* *kid* *-oo* *soso.*
 man -DEF PFV.tr gun -DEF load
 ‘The man has loaded the gun.’ Creissels (1983: 125)

- (43) *kid* *-oo* *soso* *-ta.*
 gun -DEF load -PFV.itr
 ‘The gun has been loaded.’ Creissels (1983: 125)

Although the sentence in (43) is semantically indisputably transitive in that an Effector is entailed, even if not syntactically present, it has the formal properties of an intransitive clause. In Mandinka as well as in most other Central Mande languages, this formal intransitivity is accentuated in the perfect, as in (43), that has two different markers for transitive vs. intransitive clauses. Creissels notes the parallels to a passive but refutes this possibility for by now familiar reasons – the absence of morphological or periphrastic marking. As a consequence, he claims that lexical argument structure is not a valid notion at the lexical level, but operates at the construction level.

In 1991, Creissels introduces an additional argument against the passive analysis, namely the existence of alternations like the Bambara ones in (44) and (45).

- (44) *sǒ* *bé* *boli.*
 horse IPFV run
 ‘The horse runs.’
- (45) *cě* *bé* *sǒ* *boli.*
 man IPFV horse run
 ‘The man leads the horse.’

To Creissels, the correspondence between the sentences looks more like the result of a causative derivation – (45) – that operates on an intransitive middle – (44). He gives no explanations why alternations like (44) and (45) should invalidate a passive analysis for a sentence like (43). There are several problems linked to Creis-

CHAPTER 7

sels' statements: First, it has been convincingly argued elsewhere (Grégoire 1985, Lüpke 1999) that an analysis denying a lexical argument structure for verbs conceals important regularities of the morphosyntactic organization of CM languages. Secondly, there is no reason to assume that (44) features a verb in the middle rather than in the active voice. Alternations like the 'run'-pair above (*The horse jumped (over the fence) vs. The rider jumped the horse (over the fence)*) have been described as the 'run-alternation' for English (Hale & Keyser 1987, Levin & Rappaport Hovav 1995, *inter alia*). The 'run-alternation', in contrast to the passive alternation, concerns only a limited set of verbs, has been cross-linguistically attested for otherwise internally caused verbs of manner of motion, and can be distinguished from both the passive alternation and the causative/inchoative alternation. Creissels' points will be addressed in turns, and where possible, an alternative account is given.

Pertaining to the rejection of lexical argument structure that results from Creissels' refusal to recognize a passive, the following observations are in order. Mandinka, Maninka and Bambara, dialects of the Manding cluster, behave very similar with respect to verb classes identifiable on the grounds of their morphosyntactic properties. I limit myself here to a discussion of Maninka data as presented by Grégoire (1985). She identifies three classes of verbs on the basis of the distribution of the causative marker and the appearance of these verbs in the different possessive constructions. Lexically intransitive verbs are 'agentive'. They can only be transitivized through causative derivation. A passive is only possible through intransitive use of the morphologically causativized verb. Nominalized, these verbs only appear in the alienable possessive construction. A second verb class consists of lexically intransitive 'agentive' verbs that can be transitivized with or without formal causativization. This group includes the counterparts of the verbs that Creissels makes allusion to in (44) and (45). According to Grégoire, the alternating transitive form in Maninka is preferred if the object of the causative action is inanimate (inactive), while the derived transitive is preferred if the object of the causative action is animate (active). Consequently, two passivization patterns are possible, one making use of the underived, the other of the derived verb form in an intransitive clause. Lexically transitive verbs have an 'Agent' subject in transitive use, a 'Patient' subject in intransitive use. Since their intransitive use always entails the presence of an 'Agent',⁸ Grégoire regards their transitive use as basic, the intransi-

⁸ In Mandinka, as in Soso and Jalonke, the Effector cannot be syntactically expressed in a passive clause. In Bambara and Maninka, on the other hand, it is not merely semantically present but can also be encoded in an oblique Effector phrase (see example (46) below).

tive use being the result of a transformation. The subject genitive of these verbs is encoded in the alienable possessive construction, the object genitive in the inalienable possessive construction. A fourth class of verbs that Grégoire does not mention consists of causative/inchoative alternating verbs. In the languages in question this class contains mostly de-adjectival verbs whose compatibility and meaning with the causative marker is not very clear (see Koné 1984, 1987).

Apart from intermediate cases such as the causative/inchoative and ‘run’-alternations there are thus two large complementary groups of intransitive-only and transitive-only verbs. And although transitive-only verbs can appear in two syntactic configurations, their one-place use is never ambiguous but always conveys a passive reading. The class of transitive verbs is corroborated by the fact that transitive verbs in these Manding dialects can never simply suppress their object. If an activity reading of a transitive verb is intended, the verb has to be formally nominalized through suffixation of *-li* and becomes the object of the verb *ke* ‘do’. To sum up, there are quite a few mechanisms in Manding that are sensitive to lexical argument structure – by denying it, these phenomena cannot consistently be explained.⁹

Turning to the ‘run’-alternation in more detail now, it can only be guessed why Creissels (1991) takes its existence as counter-evidence for a passive. His main reserve seems to be that we deal with two alternations going in opposite directions – for the passive from transitive to intransitive, for the ‘run’-alternation obviously from intransitive to transitive, that are both unmarked and whose distinguishability consequently can be at best stipulated. Now, there are several important properties that distinguish the two alternation types and it is not at all uncommon for verbs not to reveal these differences overtly but only by the totality of morphosyntactic properties they exhibit.

The verb that features in Creissels’ example (44) above is according to him best characterized as a middle. In accordance with Grégoire (1985) I see no reason not to call it – and the other verbs that behave in the same manner – ‘agentive’ or active in my terms. CM languages have no middle category. Notions similar to a

⁹ *Speaker intuition offers an additional piece of evidence in favor of lexical argument structure. Bambara infinitives cannot appear without the citation form. This is for intransitive verbs the particle ka followed by the verb, for transitive verbs ka + third person singular pronoun (a placeholder for the object) + verb.*

CHAPTER 7

middle are expressed by reflexive clauses¹⁰ – in cases where an entity acts on itself – or by inchoative alternants of causative/inchoative verbs – in cases where an external cause is present, but not elaborated. If a sentence like (44) were to be a middle, it had to be reflexive (as is the case of the Maninka cognate of *bòlì*, *bòrî*) or an instance of the causative/inchoative alternation. The first is clearly not the case, the latter ruled out on the following grounds:

The intransitive as well as the transitive counterpart of a causative/inchoative verb can depict the same real-world situation – I can utter ‘The vase broke’ independently of whether I actually swept it off the table or it fell on its own and broke. In CM languages, this indiscremination is highlighted by the ambiguity between an intransitive inchoative and a transitive passive clause. It is further aggravated by the fact that apart from an Effector, an Instrument or a Force can be the external cause in these cases so that when prompted, it is difficult to construe the situation as ‘really’ occurring spontaneously. Pairs like (44) and (45) above contrastingly depict very different real-world situations: An active one-place clause (44) corresponds to an active two-place clause (45) with an added cause argument. (45) can have a passive counterpart – since in Bambara, the demoted Effector can be expressed in a PP headed by *fê* ‘beside, by’ it is not only present semantically, but also syntactically.

- (46) *sô* *bé* *bolì* [*cě* *fê*].
 horse IPFV run man beside, by
 ‘The horse is lead (by the man).’

Now, what tells us that the supposed active clause in (44) and the passive clause in (46), when no Effector is syntactically expressed, do not exhibit the ambiguity present for inchoative verbs and passives of their causative counterparts? The answer is that the two clauses cannot adequately describe the same events: while (44) is appropriate when a horse runs spontaneously, without being made to do so by an external instigator, the contrary holds for (46). An Effector is at least understood.¹¹

¹⁰ Reflexive clauses in the languages in question are, as in Bambara, formally transitive, but with coreferentiality between S and O.

¹¹ See Levin & Rappaport Hovav (1995: 111) for reasons not to subsume run and other “apparent instances of the causative alternation) under the class of causative/inchoative alternating verbs in English. Although their argument is convincing for English, where the transitive uses in most cases have to be appear with a directional phrase, it has to be remarked that nevertheless, the causativization patterns of ‘run’ verbs, cross-linguistically often deviate from the causativization patterns for internally

Moreover, as a verb of manner of motion, *bòli* ‘run’ does not encode change of state or location and can only do so when modifying a verb of directed motion. Its participant is thus not a Theme, but an Effector, differentiating the verb further from causative/inchoative alternating verb whose single argument always bears the Theme role.

A similar argumentation holds for verbs of spatial configuration in Central Mande languages, whose relevant senses here are the non-causative ‘assume position’ sense’ and the causative sense. These verbs might be taken as evidence in favor of Creissel’s ‘lability’ analysis. Such a ‘labile’ pair is exemplified by Maninka:

- (47) *à lɔ -rá.*
 3SG rise -PFV:itr
 ‘He rose.’ (Grégoire 1985: 202)

- (48) *à ká bón lɔ̃.*
 3SG PFV house rise
 ‘He has built the house.’ (Grégoire 1985: 202)

For these verbs, the most plausible explanation judging from the surface-facts would be to regard them as instances of the causative/inchoative alternation looked at in detail in chapter 5.

Tröbs (1998) in his description of Jeli goes not as far as Creissels in rejecting lexical argument structure as a lexical notion altogether. His treatment is built upon a separation between lexical argument structure and syntactic valence, giving rise to the following two large verb classes:

The first class consists of ‘**syntactically monovalent verbs**’, i.e. verbs that minimally express one participant. This class is composed of three subclasses, ‘patient-oriented verbs’, ‘agent-oriented verbs’ and ‘orientation-labile verbs’. Verbs of the first subclass or ‘patient-oriented verbs’ are semantically transitive, can be morphologically simplex or morphological causatives and in their monovalent use al-

caused/uncaused intransitive verbs. In contrast to the other intransitive verbs, ‘run’ verbs cross-linguistically often appear underived in transitive clauses, a property that asks for an explanation. Moreover, the variation in argument structure and causativization properties across and within CM languages for verbs of similar semantic domains - manner of motion, directed motion and spatial configuration certainly merits a deeper investigation.

CHAPTER 7

ways encode the ‘Patient’ as the subject. Their one-place use can be expanded by an oblique by-phrase encoding the ‘Agent’. Optionally, they can express the ‘Agent’ in subject position and the ‘Patient’ in object position. The second subclass comprises ‘agent-oriented verbs’ that are semantically and syntactically intransitive and always encode the ‘Agent’ in subject position. These verbs need to undergo derivation via the causative marker in order to become ‘patient-oriented’ and to express the Agent optionally in a PP. The third subclass of ‘orientation-labile verb’ features verbs that are ambiguous as to the thematic role of their single obligatory participant, which can be both ‘Agent’ or ‘Patient’. Some of them can optionally have two participants, although the ‘agent-oriented’ version for some of these verbs makes use of a morphological causative.

The second large verb class according to Tröbs is the one of ‘**syntactically bivalent verbs**’, i.e. verbs that obligatorily express two participants. These are a handful of verbs, such as *maga re* ‘touch at’. They have two obligatory participants, an Experiencer in subject position and a Stimulus in a PP.

The existence of these two large classes, which have as their common factor that they minimally express their Theme (‘Patient’ in Tröbs’ terms) participant, if there is more than one optional participant, is reason for Tröbs to assume ergative alignment or, in his words, organization of the language around the most affected participant. If this were true, one would expect the syntactically minimal configuration to have the wider distribution and generally be identified as the basic construction in terms of markedness. Unfortunately, just like Creissels, Tröbs does not quantify the occurrence of transitive verbs expressing both or only one argument. A cursory glance at the Jeli texts in the appendix reveals, however, that transitive clauses in which only the Theme argument is syntactically present are marginal.¹² This finding, if verified systematically, would make the construction a secondary one, not the default case.

Crucial for Tröbs’ argumentation is that he regards the one-place use even of morphological causatives as basic, and their two-place use as derived. Tröbs acknowledges the morphosyntactic properties similar to those already described for other CM languages that are triggered by lexical argument structure properties. For Tröbs, however, the minimal number of arguments expressed by a verb of a given lexical argument structure – not surprisingly in the case of semantically transitives

¹² No numbers are given here because in the absence of a Jeli dictionary it was impossible to establish the lexical argument structure in all cases.

always one argument less – overrides the classification based on argument structure. What is gained by such a line of reasoning, or: what regularities does it blur?

As already criticized by Vydrine (1999b), verbs of very different argument structures and associated morphosyntactic properties are lumped together by Tröbs' approach. Moreover, classes are established on the basis of a behavior that is the only possible for some of them – the 'agent-oriented' verbs – but a secondary one for a large group of them – the 'patient-oriented' verbs. Moreover, postulating a subclass of 'orientation-labile' verbs conceals that some of them – the causative/inchoative alternating verbs in my terminology – share important features with 'patient-oriented' and 'agent oriented' verbs. And, most unusual, all optionally transitive verbs, be they simplex or derived, which in most cases express their two arguments and would count as 'bivalent' on most approaches, are classed as 'monovalent' by Tröbs. In contrast, verbs that have no direct object but encode their second participant in a PP count as the only 'bivalent' verbs of Jeli.

Tröbs judges Jeli as typologically equivalent to a language like Samoan, where, according to Mosel & Hovdhaugen (1992) only the intransitive subject or S and the transitive O, both encoded in the absolutive, are obligatory. Ergative NPs, encoding the transitive A are in most cases not expressed. Mosel & Hovdhaugen see a similarity to passive sentences in English in this behavior, but also note an important difference between Indo-European passives and the facts of Samoan: "The argument expressing the patient however is not a derived S as in passive constructions, but a non-derived O." (Mosel & Hovdhaugen 1992: 702) Again, no numbers are put forward, but the authors state that the phenomenon is widespread. It remains obscure to me where the parallels between Samoan and Jeli lie. Samoan, an ergative-absolutive language, allows the deletion of the A, always encoded in the ergative, quite pervasively and without concomitant remapping of arguments. Jeli, a nominative-accusative language, has a marginal construction that does not merely delete the A of a transitive clause, but remaps the O onto S position.

It seems to me that accounts based on morphosyntactic properties, unmarked syntactic valence, and the admission of alternations (Bergelson 1991, Grégoire 1985, Kastenholz 1987) do more justice to CM languages than the approaches taken by Creissels and Tröbs. Jalonke verbs share many class-identifying argument structure properties with the CM languages in question. The analysis based on morphosyntactic properties for Jalonke proposed here fits approaches to other CM languages that are based on lexical argument structure and alternations from it, among them

CHAPTER 7

the passive. Moreover, a quantitative study corroborates the findings won on the basis of morphosyntactic behavior. In view of the similarities between Jalonke and other CM languages, it is highly probable that similar studies in these languages will confirm the analysis defended here for Jalonke.

7.3.2.2. SUMMARY ON THE PASSIVE ALTERNATION

The passive alternation is applicable to all transitive verbs and results in a clause that is semantically equivalent to the corresponding active clause. The passive alternation goes hand in hand with a reduction in valence and a remapping of participants to grammatical relations: the Effector is linked to subject, and the Theme is not syntactically expressed. In view of its scope over all transitive verbs, the passive alternation of Jalonke is a morphosyntactic operation par excellence, and serves to confirm the class of transitive verbs in the language, since the possibility for a passive sets these verbs apart from all other verb classes. The passive alternation is cross-linguistically remarkable, since formally unmarked passives are a matter of considerable debate. In view of the markedness of the alternation, however, an analysis in terms of a zero-marked passive seems to be the most convincing one. This is most likely the adequate analysis not only for Jalonke, but also for other CM languages.

7.4. MORPHOLEXICAL OPERATIONS

7.4.1. DISTRIBUTIVE DERIVATION

The present section introduces another derivational verbal prefix, *ma-*. The marker distributes the event designated by the verbal predicate over several participants or pluralizes the event itself. As such, it very much resembles the verbal plural markers known from North American (Durie 1986, Mithun 1988) and African languages (Greenberg 1966, Frajzyngier 1985). These verbal plural markers do not indicate nominal number via agreement, but grammaticalize the number of participants or actions as an inherent property of the event description. One of the characteristics that distinguish verbal number from nominal number is its irregularity: it is often encoded by stem suppletion, reduplication or derivational affixes and only occurs with a limited number of bases. Mithun gives an explanation for this behavior:

The distinction between singular and plural number may be equally applicable to all nouns, but it is not equally pertinent to all verbs. For some events, number can be central: One bird flitting can be conceived of as a different event from a flock flying by in formation. Picking up one object can be classified as a different mo-

MORPHOSYNTACTIC AND MORPHOLEXICAL OPERATIONS

tion from gathering up a lot of objects. Such distinctions can be sufficiently important to be encoded lexically [...] (Mithun 1988: 231)

Languages that exhibit number as a verbal category often show an ergative pattern with respect to the participants whose plurality is indexed on the verb: as pointed out by Frajzyngier (1985) and Mithun (1988), it is the object that is pluralized for transitive verbs, but the subject for intransitive verbs. Frajzyngier (1985) makes another prediction for the interaction of verbal and nominal number:

If a language encodes the number of patient and of some other argument, including the number of action, then the number encoding in the nominal system will be constrained in a manner different from when the number encoding in the verb does not include the patient. In particular, the number encoding in the nominal system will be constrained to certain syntactic relations or semantic classes of nouns. (Frajzyngier 1985: 99)

Furthermore, Dressler (1968) and Xrakovskij (1997) regard it as one of the characteristics of distributive situations that they can occur simultaneously or successively, and that some languages make a distinction between the two types of situations.

Below, the possibilities of verbal number or distributive marking in Jalonke are explored. Since this morpholexical operation works independent of argument structure properties of the verbs to which it applies, it is treated in terms of the two most productive meanings attested with it. For a number of verbs with stative components of meaning, the distributive derivation grades the property or quantifies the degree of change denoted by these verbs. For other verbs, the distributive pluralizes an event or its participants. While the properties of verbal number correspond to the cross-linguistic tendencies mentioned above in many ways, the interaction between nominal and verbal number is shown to be different from Frajzyngier's prediction.

7.4.1.1. THE DISTRIBUTIVE MARKER *MA-*

The distributive marker is less productive than the causative marker: 42.6% of the intransitive verbs combine with it, and those that do exhibit many semantic irregularities. With transitive verbs, it is more productive: 70.6% admit it, and among them are fewer lexicalizations. As for reflexives-only, *ma-* is possible with 56.2%

CHAPTER 7

of them. Finally, 59% of the causative/inchoative alternating verbs are attested with the distributive marker.

The distributive marker *ma*-¹³ (49) is homophonous with the general locative post-position *ma* ‘at’ (50):

- (49) *Nxo gɛmɛ -dii -nee ma- tongo.*
 1PL.E rock -DIM -DEF.PL DISTR- take
 ‘We took many small rocks.’

Pilgrim-
Sall 012

- (50) *A wal -ɛɛ tand -ɛɛ ma.*
 3SG work -IPFV courtyard -DEF at
 ‘He is working in the courtyard.’

Canary 002 SKB

Among the verbs that do not occur with the distributive are verbs that already lexicalize a plurality of actions and/or participants, such as *gerensen* ‘disperse, scatter’, which is a *plurale tantum* in English as well. Just as for the other derivational verbal prefixes, etymologically polymorphemic verbs do not admit derivation through *ma*-.

Some verbs derived in *ma*- are clearly lexicalized forms. Several patterns occur: The derived verb can have the same valence as the apparent base, to which it is not regularly related semantically:

¹³ For Soso, where the marker is equally present, it has been analyzed by Houis (1963) as an iterative marker, and by Friedländer (1974) as a frequentative that serves as well as a transitivity marker for intransitive verbs. *Ma*- appears in several other Central Mande languages, where it has been attributed frequentative or iterative meaning in some cases (e.g. Tröbs 1998 for Jeli). A frequentative meaning component is indeed inherent to Jalonke *ma*-, too, since the distribution of an action implies its multiplication. Nonetheless, in Jalonke *ma*- does not convey the frequent repetition of an action at different times, but rather a repetition being part of a single event. It is shown in 7.4.2 that it is *i*- rather than *ma*- which expresses iterativity in Jalonke. Keita (1990) introduces *ma*- and *i*- as preverbs of Dialonké, but does not give a clear semantic content for them, apart from ascribing locative semantics to them.

MORPHOSYNTACTIC AND MORPHOLEXICAL OPERATIONS

- (51) *ma-tii* *tii*
 'sell' 'stand, put upright'

- (52) *ma-mεε* *mεε*
 'wait for' 'hear, understand'

For the second irregular pattern, the derived verb is increased in valence:

- (53) *ma-jentunu* *jentunu*
 'surprise some- 'be absent-minded, be
 body' distracted'

With another set of verbs, the forms in *ma-* have a transitive causative meaning, while the corresponding simplex forms are intransitive:

- (54) *ma-keɲε* *keɲε*
 'make hurry' 'be in a hurry'

- (55) *ma-xunu* *xunu*
 'wake somebody up' 'wake up'

With other verbs, *ma-* also deviates from the distributive pattern, but exhibits a more homogeneous contrast in meaning, for a group of verbs quantifying the degree of change (7.4.1.2), for others distributing the event or its participants (7.4.1.3).

7.4.1.2. THE DISTRIBUTIVE QUANTIFYING OVER THE DEGREE OF CHANGE

For a number of verbs, *ma-* does not seem to quantify the event denoted by the verb or one of its participants, but to quantify the degree of change or to grade the property denoted by the verb. Not surprisingly, the verbs admitting this reading of *ma-* are verbs with a state component in their event structure: externally caused and uncaused state change and stative verbs. For the stative verbs occurring with this reading of *ma-*, the distributive marker grades the property denoted by the base verb:

CHAPTER 7

- | | | |
|--------------------|-------------------|---------------------------------|
| (56) <i>fiixε</i> | <i>ma- fiixε</i> | |
| ‘be white’ | | ‘be a little white, be whitish’ |
| | | |
| (57) <i>bundaa</i> | <i>ma- bundaa</i> | |
| ‘be wet’ | | ‘be a little wet, be humid’ |
| | | |
| (58) <i>fisa</i> | <i>ma- fisa</i> | |
| ‘be better’ | | ‘be a little better’ |

The meaning of verbs with stative readings in combination with *ma-* is independent of their argument structure: *fiixε* ‘be white’ has stative, inchoative, and causative readings, and is compatible with the distributive on all three readings with identical semantics. For the stative reading, the state of being white is graded, for the inchoative reading, the action of becoming white is graded, and for the causative reading, the action of making white is graded.¹⁴ In analogy, for *bundaa* ‘be wet’ and *fisa* ‘be better’, which only admit stative and inchoative readings, these two readings are graded through derivation in *ma-*.

For verbs of change that do not lexicalize a result state discrete from the source state or ‘degree achievements’, *ma-* quantifies over the degree of change denoted by the verb. In other words, the result state of these verbs of change is graded:

- | | | |
|-------------------------------|----------------|----------------------------|
| (59) <i>tee</i> | <i>ma-tee</i> | |
| ‘ascend’ | | ‘ascend a little’ |
| | | |
| (60) <i>goro</i> | <i>ma-goro</i> | |
| ‘descend’ (V _{itr}) | | ‘lower’ (V _{tr}) |
| | | |
| (61) <i>bɔrɔ</i> | <i>ma-bɔrɔ</i> | |
| ‘rot’ | | ‘rot a little’ |

As generally observable for *ma-*, the derivation sometimes goes hand in hand with a change in argument structure; thus, as in (60), it can create a transitive verb out of an intransitive base verb.

¹⁴ The properties thus graded for the different readings of the verbs in question are analogous to those suggested by Kennedy & Levin (2001) in order to account for ‘degree of change’ with all verbs of change of state.

MORPHOSYNTACTIC AND MORPHOLEXICAL OPERATIONS

In some cases, telic verbs of change are turned into degree achievements through derivation in *ma-*, as for instance *mini* ‘exit’ in (62):

- (62) *mini* *ma-mini*
 ‘exit’ ‘move away from’

Sometimes, the semantics of *ma-* quantifying over the degree of change are attested with verbs which do not seem to be related to the base verb at a first glance, as in the case of *matuu* ‘be tired’ below:

- (63) *tuu* *ma-tuu*
 ‘die’ ‘be tired (lit.: die a little?)’

7.4.1.3. THE DISTRIBUTIVE MARKER PLURALIZING AN EVENT OR ITS PARTICIPANTS

For other verbs, the event denoted by the verb is distributed over several participants, in general the one which is closest in position to the putative original postposition. This participant is the subject for an intransitive, and the object for a transitive verb. (64) gives an example for a transitive verb in, and (65) shows an intransitive verb.

- (64) *N* *a* *ma-* *bɔmbɔ*.
 1SG 3SG DISTR- hit
 ‘I beat him up./I gave him a beating.’

- (65) *Nxo* *ma-* *giri* *xure-* *-n*’ *i*.
 1PL.E DISTR- cross stream -DEF at
 ‘We crossed the stream a lot.’

If reflexive-only bases admit distributive derivation, they never increase their valence, but maintain the coreferentiality of subject and object:

- (66) *Nxo* *nxo* *ma-* *ɲere* *i*, *nxo* *dugi* *-nee* *sara...*
 1PL.E 1PL:E DISTR- walk at 1PL.E cloth -DEF.PL buy
 ‘We walked around a lot there, we bought clothes...’ Ai Kumba 3-042

In combination with the majority of transitive bases, *ma-* behaves much more predictably than with the ones introduced in 7.4.1.2: either it distributes an action over

CHAPTER 7

several objects, which appear in the plural or are mass nouns, or it indicates a repeated action on a single object, or both. Both possibilities have in common that the action is pluralized. This seems to be the stable component in meaning of the distributive marker, the single vs. several participants distinction being due to the combined semantics of object and verb. There is another marker that indicates a repetition of actions, the iterative marker *i-* (see 7.4.2.1 below). The main difference in the semantics of distributive and iterative is that the actions repeated with *ma-* are construed as a single macro-event, i.e. have one single location in time. The iterative can never designate a single event. Rather, the iterative marks the re-occurrence of an earlier event at a later time.

Example (68) illustrates how *ma-* distributes the action designated by the corresponding simplex verb in (67) over several objects:

- (67) *N sii -na bura.*
 1SG goat -DEF skin
 ‘I skinned the goat.’

- (68) *Sali -soge -n’ i, nxo sii -nee ma- bura*
 holiday -sun DEF at 1PL.E goat -DEF.PL DISTR- skin
 ‘On the holiday, we skinned many goats

-x’ εε i taa -na birin i.
 -PF 3SG at village -DEF all at
 everywhere in the village.’

Ma- is not a nominal plural marker that ended up on the verb. More than one goat can be skinned without recurring to the distributive (69); the depicted event then doesn’t make allusion to a particular multiplication or frequency of occurrence as is the case in (68) above, where goats were killed and skinned all over the village:

- (69) *N sii -nee bura.*
 1SG goat -DEF.PL skin
 ‘I skinned the goats.’

It is incompatible with the semantic construal of skinning a goat to repeat the action on a single object – the distributive marker is ruled out on *bura* ‘skin’ with an object in the singular:

- (70) **Nxo sii -na ma- bura.*
 1PL.E goat -DEF DISTR- skin
 *‘We skinned a goat many times.’

The same is true for events like plaiting heads or locking doors. The multiple locking of a single door (implying an intervening unlocking) would not receive a single-event reading and thus cannot be indexed with the distributive marker, and the same holds, e.g., for the plaiting of heads or the intensive praying of one person. Consequently, it is impossible to produce a sentence like (71), whereas the iteration of the same situation, with an unspecified time interval intervening between the two plaiting situations as in (72), is perfectly admissible:

- (71) **Nxo/n a xun -na ma- dembe.*
 1PL.E/1SG 3SG head -DEF DISTR- plait
 * ‘We/I plaited her head several times.’

- (72) *Nxo/n a xun -na i- dembe.*
 1PL.E/1SG 3SG head -DEF ITER plait
 ‘We/I plaited her head again.’

Some actions can only be performed once on the same participant, like killing somebody, castrating a bull, or giving birth to a child. Their appearance with the distributive marker is limited to plural objects.

For other events, however, it is conceivable to multiply them either on one single participant or to distribute them over several participants. This is the case for beating-events: In (73), one single thief receives a proper beating; in (74), a group of thieves is concerned.

- (73) *N mugar -εε ma- bombə.*
 1SG thief -DEF DISTR- beat
 ‘I beat up the thief.’

- (74) *N mugare -nee ma- bombə.*
 1SG thief -DEF.PL DISTR- beat
 ‘I beat up the thieves.’

CHAPTER 7

This possibility is also available for events like piercing ears, biting somebody, etc.

The occurrence of the distributive marker has no influence on the coding of nominal plurality. Jalonke therefore doesn't confirm Frajzyngier's (1985) claim that verbal number marking leads to reduced nominal number marking. Unless the distributed participant is a *plurale tantum*, as in (75) below, the plural marker is always present on the noun if the event comprises more than one referent concerned by the distributed action(s), as in (68) and (74) above. This interaction of distributive and definite marking makes a distinction between distributed events over one vs. over several participants possible.

- (75) *N jee -na ma- baa.*
1SG water -DEF DISTR- extracr
'I drew much water.'

7.4.1.4. SUMMARY ON DISTRIBUTIVE DERIVATION

The distributive derivation is a clear case of a morpholexical operation: many verbs do not admit the derivation, and for those that do, many lexicalized meanings are observable. Moreover, the derivation is not sensitive to argument structure properties of the base verb but accesses information present at the lexical level – either idiosyncratic lexical information, or information about a verb's event structure. The latter is specifically the case for one of the meanings of the distributive marker, namely the one where it grades a property or quantifies the degree of change denoted by the base verb. For the verbs with which the marker yields distributive meanings, event structure and constant properties are also relevant, since how an event can be distributed depends on this kind of information.

7.4.2. ITERATIVE DERIVATION

The semantics of the iterative in Jalonke oscillate between what Dressler (1968) terms as 'discontinuative' and 'repetitive'. The former focuses on the rareness of the repetition, stressing the pauses between the single occurrences of the repeated actions. The latter designates an action that is reproduced several times, without stressed pauses between the different occurrences.

7.4.2.1. THE ITERATIVE MARKER I-

In parallel to the other derivational markers, the iterative marker *i-* (78) has its counterpart in a postposition, *i* 'at'. This postposition designates locations con-

strued as a point in space, among them toponyms (77), and, in analogy, locations in time (78).¹⁵

- (76) *A a i- bundu.*
 3SG 3SG IT- milk
 ‘She milked it (the cow) again.’ Ndereji 228

- (77) *Nxo siga Missira i.*
 1Pl.E go Missira at
 ‘We went to Missira.’ Xoro 001

- (78) *Alarba -n’ ii, n leter -dii nda seb -εε.*
 Wednesday -DEF at 1SG letter -DIM some write -IPFV
 ‘On Wednesday, I’ll be writing a letter.’ Ataya 913

It likely that the origins of the iterative marker lie, parallel to the other pairs of postposition and derivational marker, in the postposition *i*. However, I have so far not been able to come up with a semantic motivation for this grammaticalization.

I- is the least productive verbal prefix of Jalonke: It is compatible with only 37% of the intransitive verbs, 60% of the transitive verbs, 37.5% of the reflexive-only verbs, and 48.3% of the causative/inchoative alternating verbs in the lexicon.

For some verbs, the absence of a derivation with *i-* is predictable: since the situations they describe can only occur once for the same participant, the iterative is ruled out for verbs like *tuu* ‘die’, *faxa* ‘kill’ or *gaji* ‘finish’.

For a number of verbs that do not admit *i-*, a repetition of the situation is expressed by the adverbs *sənnən* and/or *mən*, both translatable roughly as yet, ‘again’, rather

¹⁵ Again, *i* occurs as a postposition and as a preverb in Soso, too. Houis (1963) analyzes it as a marker adding “une valeur d’intensité” (1963: 78). Friedländer 1974) agrees with that analysis, adding the remark that it can turn verbs of movement into states, like *i-te*, ‘lift’, but also ‘be elevated’, from *te* ‘ascend’. Both authors ascribe frequentative (Friedländer) or iterative (Houis) meanings to *ma-* rather than to *i-* in Soso. Nevertheless, many of their examples are compatible with the analysis proposed here for Jalonke: Among many similar examples, Friedländer gives the base to ‘see’, with the derived forms *ma-to* ‘watch’ and *i-to* ‘examine’, and *don* ‘eat’, *ma-don* ‘graze, feed’, *i-don* ‘chew, ruminant’. As for Dialonké, Keita (1990), states the semantics of *i-* only vaguely, ascribing it “une valeur de base de type locatif” (1990: 78).

CHAPTER 7

than by the derivational prefix. *Mən* seems to take over gradually the functions of the iterative prefix anyway, since the two means of expressing iteration often co-occur with each other, as in (79):

- (79) *I balon -na balon, a mun siga.*
 2SG ball -DEF kick, 3SG NEG leave
 ‘You kick a ball, it doesn’t go.’

I mən xa a i- balon.
 2SG yet SUBJ 3SG IT- kick¹⁶
 ‘You’ll kick it again.’

The iterative marker can, however, also appear independently of the adverb, as in the following example, where repetition is marked in one clause by the means of *mən* ‘yet, again’, followed by a paraphrase using the iterative form of the verb:

- (80) *E mən a fɔlɔ, e a i- fɔlɔ,*
 3PL again 3SG begin 3PL 3SG IT- begin
 ‘They started again, they started again (referring to the start of the second half-time of a soccer game)’

Soccer2-000

Lexicalized meanings arise: *i-tii*, diachronically apparently derived from *tii* ‘stand’ means ‘start to diminish (of rain)’, *i-xɔnɔ*, with the base *xɔnɔ* ‘hurt’, means ‘answer impolitely’, for instance in a reaction to a greeting. Often, lexicalized meanings retain the original semantics, but are specialized in referring only to certain kinds of action. Thus, *i-bɔmbɔ*, from the base *bɔmbɔ* ‘hit’, designates the repeated beating of clothes performed when washing them and is often used with the meaning ‘do laundry’. Likewise, *i-sɛgɛ*, related to the simplex *sɛgɛ* ‘cut (wood)’, means ‘chop (wood)’, and does not merely indicate a repetition of the cutting.

In contrast to the causative and the distributive markers, derivation in *i-* only very marginally results in a valence increase for intransitive verbs. Among the handful of intransitives that add an argument are mainly verbs of directed movement like *tee* ‘ascend’. Their iterative form is transitive and is very similar to the distributive

¹⁶ Although *balon* ‘ball’ and *balon* ‘kick’ are homophonous, it is unlikely that they are semantically related, i.e. that ‘kick’ is a verbalization of ‘ball’. *Balon* ‘ball’ is most plausibly a loanword from French *ballon*; whereas *balon* ‘kick’ is used for the action of kicking with one’s feet for a wide range of objects, not limited to balls.

form of these verbs in that it equally quantifies over the degree of change denoted by these verbs. For *tee*, the iterative form *i-tee* means ‘lift, raise’. Reflexive-only verbs never add an argument as a result of iterative derivation. Because of the limited importance of valence-increase for *i-*, in the following no distinction is made between intransitive and transitive verbs.

For the large majority of verbs, the meaning of the iterative marker is quite straightforward: it encodes that the action designated by the verb has occurred at least once before in the past, without specifying the number of repetitions or the time interval intervening between them. In (81), a single repetition is asked for. In (82), the number of repetitions that are referred to certainly exceeds one, since the trampling of millet that serves to separate the grains from the chaff asks for more than one instance of trampling.

- (81) *N m' aa mɛɛ. A i- fala!*
 1SG NEG 3SG understand 3SG IT- speak
 ‘I haven’t understood it. Say it again!’

- (82) *N funden- xul- la i- bɔrɔn,*
 1SG millet -skin -DEF IT- make twisting movements
 ‘I trampled the millet again,

baa, a mun nun fiixɛ.
 well 3SG NEG PAST be white
 well, because it wasn’t properly done.’

The only systematic difference in meaning for the iterative marker surfaces, as for the distributive marker, with verbs having a state component. For many of those, especially in their stative reading and referring to individual-level properties (cf. 3.5), i.e. properties that designate typical, time-stable properties of referents, *i-* intensifies the original verb meaning, being roughly equivalent to English ‘doubly, twice’:

- (83) *Taanu daxu -xi nde haa, a i- daxu.*
 Taanu be stupid -PF INACT until 3SG IT- be stupid
 ‘Taanu was so stupid, he was even doubly stupid.’

CHAPTER 7

- (84) *Ee, n baaba xaqɛ -xi nde haa,*
 DISC 1SG father be ferocious -PF INACT until,
 ‘Hey, my father was so stern,

a i- xaqɛ.
 3SG IT- be ferocious
 he was even doubly stern.’

Other verbs admit both the repetitive and the intensifying readings:

- (85) *A gɔndɔn -xi nde, a fisa.*
 3SG be slim -PF INACT 3SG be better
 ‘He was gaunt (a sign of disease), he recovered.

A mɛn xa i- gɔndɔn.
 3SG again SUBJ IT- be slim
 He got gaunt again.’
- (86) *Ning- ɛɛ gɔndɔn -xi haa, a i- gɔndɔn.*
 cow -DEF be slim -PF until 3SG IT- be slim
 ‘The cow is so gaunt, it is doubly gaunt.’

Applying the monosemy bias (Ruhl 1989), it seems appropriate to assign one single meaning to the marker *i-* that encompasses both possible readings, that of repetition of an action and that of intensification of a state by metaphorically repeating it, under the notion of iterativity.

7.4.3. THE UNEXPRESSED OBJECT ALTERNATION

As already noted in passing, CM languages generally do not permit an alternation exemplified by English below, in which the subject of the transitive use of a verb bears the same thematic role as the subject of the intransitive verb does:

- (87) Birgit drank a glass of Tullamore Dew.
 (88) Birgit drank out of despair.

This alternation, exhaustively discussed for many Indo-European languages (see Levin (1993), Goldberg (2003) for an overview) has received contrasting treatments for the languages where it has been attested. Since rather heterogeneous

groups of verbs are concerned, the proposed motivations are diverse. They are not discussed here for a simple reason: their general inapplicability for Jalonke. In contrast to English, where factors like semantic recoverability of the object, a change in lexical aspect or non-focality of the object can license the alternation, Jalonke is insensitive to all these factors – the alternation is attested for a total of five verbs in the lexicon. These five verbs are *sali* ‘pray’, *xaran* ‘read, study’, *mugan* ‘be composed, find consolation’, *summun* ‘chat’, and *bəxun* ‘spit, vomit’.

The regular pattern for the one-place use of transitive verbs is that laid out in 7.3.2: they receive a passive reading. It is highly plausible that it is the existence of this unmarked passive that blocks the unexpressed object alternation in virtually all cases. Not only is the number of verb types that participate in the alternation extremely low, the token frequency of these verbs in texts confirms its marginality. Only 0.8% of all verb tokens in the quantitative study introduced in detail in chapter 9 appear in the alternation.

Nonetheless it is interesting that the two readings for the five verbs attested in the unexpressed object alternation go hand in hand with changes in telicity cross-linguistically observed for Incremental Theme verbs. Three verbs, *sali* ‘pray’, *mugan* ‘be composed, find consolation’ and *xaran* ‘read’,¹⁷ receive a telic interpretation when used with an object (89). Used without an object, in contrast, the verbs receive an atelic interpretation (90):

- (89) *Nxo jum -aa sali,*
 1PL.E Friday -DEF pray
 ‘We prayed the Friday (prayer)...’ Pilgrim-Sall 010

- (90) *Nxo siga julirde -na ‘a, nxo sali...*
 1PL.E go mosque -DEF with 1PL.E pray
 ‘We went to the mosque, we prayed...’ Ibrahima 006

The admissibility of telic and atelic readings becomes evident from the ‘realization-under-cessation-test’ introduced in 1.8.4.3, which differentiates both readings through the answer to the question ‘X was *verbing*, when he was interrupted. Did

¹⁷ *Sali* ‘pray’ and *xaran* ‘read, study’ are loanwords from Arabic that probably entered into Jalonke via Fula. Both belong to the relatively few verbs that often surface as nouns (cf. 2.4.1, Appendix 3). Possibly, these verbs were borrowed several times as members of different word classes.

CHAPTER 7

X *verb*?’ In the case of (89), the telic reading; the answer is ‘no’, for the atelic reading in (90) it is ‘yes’. This subtype of the unexpressed object alternation is known under the names ‘Unspecified Object Alternation’ or ‘Indefinite Object Alternation’ (Levin 1993) because the verb in the intransitive clause is understood to have a ‘typical’ object.

Different from this type of unexpressed objects is a second type manifested in the Jalonke verb *bɔxun* ‘spit, vomit’. Some authors (e.g. Levin 1993), analyze as an alternation different from the unexpressed object alternation, because they classify the verbs participating in this alternation as basically monadic. The alternation concerns many verbs of bodily emission and verbs of nonverbal expression. In their transitive use, these verbs in many languages take an often zero-related cognate object, as in English ‘She smiled a smile’. Therefore, the alternation has been labeled ‘Cognate Object Alternation’ (see Levin 1993 for a detailed account). Although the Jalonke verb remains in both uses atelic and belongs to a semantic domain for which the cognate object alternation is attested cross-linguistically, no cognate object exists for it. *Bɔxun* ‘spit, vomit’ occurs with *bande* ‘food’ or the specific foodstuff that is discharged, as in (91); or with *lenxe* ‘saliva’, as in (92), as an object. The verb is, however, never attested with an object cognate to the verb root.

- (91) *A* *kans* -εε *bɔxun* -ma.
 3SG peanut -DEF vomit -IPFV
 ‘He is vomiting peanuts.’

- (92) *N* *lenx* -εε *bɔxun* -ma.
 1SG saliva -DEF vomit -IPFV
 ‘I am spitting saliva.’

Still, the verb *bɔxun* exhibits properties that situate it closer to the cognate object alternation than to the unexpressed object alternation: it does not allow a wide range of objects. Although it might be argued that the same is true for *sali* ‘pray’, which only permits the names of the five muslimic prayers or the religious holidays at which they are prayed as objects, the verb changes its lexical aspect from one use to the other.

Since the lexical argument structure status for the five verbs in question cannot ultimately be clarified, they are all grouped together here under the label unexpressed

object alternation and preliminarily classified as transitive verbs. The marginality of the alternation makes it probable that we are dealing with lexicalized cases, preempted for the majority of likely candidates by the passive alternation. For the alternating verbs, a passive interpretation never arises from their intransitive use if their single participant is animate, because the two participants of these verbs are asymmetrical in animacy: their Effector is always animate, their Theme is always inanimate. The objectless alternant and the passive alternant of these verbs can thus not be confounded, as illustrated by the following two examples. In (93), because of the animate subject participant, the intransitive clause featuring *xaran* ‘read’ can only be interpreted actively; and in (94), because of the inanimate subject participant, it can only be interpreted passively.

(93) *N xaran.*

1SG read

‘I read.’

* ‘I was read.’

(94) *Alguraa -na xaran.*

Koran -DEF read

‘The Koran was read.’

* ‘The Koran read.’

7.4.3.1. ACTIVITY READINGS FOR NON-ALTERNATING TRANSITIVE VERBS OF CHANGE OF STATE

As demonstrated in the previous section, the transitive and intransitive uses of most of the verbs undergoing the unexpressed object alternation are distinguished in terms of their aspectual properties. The transitive uses of these verbs denote telic state changes; their intransitive uses receive an atelic interpretation. This change in aspectual properties concomitant with the unexpressed object alternation raises the question of how the transitive verbs that do not participate in this alternation express activity uses, if they are verbs of change of state. Although by far the lion’s share of transitive verbs does not license these intransitive atelic readings, some of them, corresponding to Dowty’s Incremental Theme verbs, do allow atelic readings resulting from properties of their Theme participant. Since *eat* in English is one of the most prominent verbs cited in the context of the unexpressed object alternation, its Jalonke counterpart *don* may serve to illustrate how the activity reading of base transitive verbs is expressed in Jalonke for the verbs that do not permit the suppression of the object. In English, *eat* may convey an atelic reading if used with a

CHAPTER 7

non-quantized object or by deleting the object altogether. For Jalonke, only the first of these two possibilities is available for non-alternating verbs. In contrast to English, however, quantizedness does not depend on definite marking on the noun. Due to the wide scope of the definite marker (see 2.6.4.1), even definite NPs can be interpreted as generic or non-referring. For *don* ‘eat’, a non-quantized interpretation is thus achieved through the cognate object *don-na* ‘food-DEF’ (95) or the generic noun *bande-na* ‘food-DEF’ (96) in object position.

- (95) *I na don -na don, i jɔx -ɔɔ nan na.*
 2SG when eat -DEF eat 2SG pay -DEF FOC with
 ‘When you eat (lit.: the food), that is your pay.’ Alpha 062

- (96) *Boor -εε gaji band -εε don na,*
 other -DEF finish food -DEF eat with
 ‘The other finished eating (lit.:the food),

a a jii -na xaa -ma xɔri.
 3SG 3SG arm -DEF wash -IPFV now
 he is washing his hands now.’ Onions 015

In contexts with generic nouns, the absence of a telic reading can be demonstrated through the realization-under-cessation (97) and the duration-completion tests (98) (introduced in 1.8.4.3 and 1.8.4.4 respectively):

- (97) *I na don -na don -ma, i banta a don?*
 2SG when eat -DEF eat -IPFV 2SG PF 3SG eat
 ‘When you are eating (lit.: the food), have you (already)
 eaten (lit.: it)?’

Owun, n banta a don.
 yes 1SG PF 3SG eat
 ‘Yes, I have (already) eaten (lit.: it).’

- (98) *Nxo band -εε don ler keden nan kwi.*
 1PL.E food -DEF eat hour one FOC in
 ‘We ate (lit.: the food) for an hour.’

MORPHOSYNTACTIC AND MORPHOLEXICAL OPERATIONS

A tagi -n' ii, nxo banta a don.
 3SG middle -DEF at 1PL.E PF 3SG eat
 In the middle of it, we have (already) eaten (lit.: it).'

For these verbs, telicity vs. atelicity is thus achieved compositionally through an interaction of the feature of change of state, which is encoded in the verb, and of the feature of quantizedness vs. divisiveness, which is encoded in the Theme.

7.4.3.2. SUMMARY ON THE UNEXPRESSED OBJECT ALTERNATION

The unexpressed object alternation is extremely marginal in Jalonke, both in terms of the number of verbs concerned by it and in terms of its occurrence in texts. This distribution identifies it as a morpholexical operation. Although extremely infrequent, some attention was paid to this alternation, because its inapplicability to the overwhelming majority of transitive verbs hardens the passive analysis for their intransitive uses. An ambiguity often present for the intransitive uses of potentially transitive verbs in languages with free argument ellipsis is not attested at all in Jalonke. Although the verbs undergoing the unexpressed object alternation can have passive intransitive uses, these uses are never ambiguous, because the Theme of these verbs is always inanimate, being thus in all syntactic contexts recognizable as a Theme, independent of its linking to object or subject.

7.4.4. THE APPLICATIVE ALTERNATION

Only two verbs of Jalonke, *waa* 'weep, cry' and *wale* 'work' are attested so far as participating in the applicative alternation. In contrast to the verbs that undergo the unexpressed object alternation, the basic argument structure of these two verbs is clear: they are base intransitive verbs that allow the promotion of a peripheral participant to object position for a very limited number of referents.

Thus, *waa* 'weep, cry' is attested with a wide range of adjuncts, as exemplified in the following four examples:

- (99) *A faa -ma waa ra a fur -εε ma.*
 3SG come -IPFV cry with 3SG stomach -DEF at
 'She is coming crying about her stomach.' Nga 059

- (100) *Binta, i waa -ma nen ma?*
 Binta 2SG cry -IPFV what at
 'Binta, what are you crying about?' Summuna 174

CHAPTER 7

- (101) *N waa -ma Hawa ma.*
 1SG cry -IPFV Hawa at
 ‘I am crying about Hawa.’

- (102) *N waa -ma jɛn -nee ma.*
 1SG cry -IPFV end -DEF.PL at
 ‘I am crying about the dead.’

In contrast, in its transitive use, *waa* ‘weep, cry’ allows only three kinds of objects: *jɛn* ‘end’, in the sense of ‘the ended, i.e. the dead’ and *xɔli* ‘need’, and human referents, taking on the sense of ‘mourn, lament’:

- (103) *N jɛn -nee waa -ma.*
 1SG end -DEF.PL cry -IPFV
 ‘I am mourning the dead.’

- (104) *N Adama xɔl -la waa -ma.*
 1SG Adama need -DEF cry -IPFV
 ‘I am nostalgic of Adama (lit.: mourning Adama’s need)’

- (105) *A a manga waa -ma.*
 3SG 3SG king cry -IPFV
 ‘She is mourning her husband.’

Nga 156

Wale ‘work’ presents an exactly parallel case. In its intransitive use, the verb allows numerous locative adjuncts, as illustrated below:

- (106) *N wale Labe i.*
 1SG work Labe at
 ‘I worked in Labe.’

- (107) *N wale -xi beeji too.*
 1SG work -PF here today
 ‘I have worked here today.’

- (108) *N wale -xi nde xɛɛ ‘n ii.*
 1SG work -PF INACT field -DEF at
 ‘I had worked on the field.’

MORPHOSYNTACTIC AND MORPHOLEXICAL OPERATIONS

For the transitive alternant of *wale* ‘work’, only three objects are allowed – *xεε* ‘field’, *jaba* ‘onion’ and *kansi* ‘peanut’ (the latter two being the main cash crops), and the verb takes on the sense of ‘cultivate’:

- (109) *Nxo* *xεε* *-na* *wale*.
 1PL.-E field -DEF work
 ‘We cultivated the field.’

- (110) *On* *jab* *-aa* *wale*.
 1PL.I onion -DEF work
 ‘We cultivated onions.’

Tande 361

- (111) *Nxo* *xa* *kans* *-εε* *wale*.
 1PL.E SUBJ peanut -DEF work
 ‘We should cultivate peanuts.’

Alpha 031

Waa ‘cry, weep’ and *wale* ‘work’ are the only two verbs attested in this alternation, and the tokens of these verbs occur only in 0.2% of all verbal clauses in the quantitative study presented in chapter 9. Thus, the applicative alternation fulfills all the conditions for a morpholexical operation: it is highly restricted in generality; it goes hand in hand with a change in meaning; and it is extremely infrequent in texts.

7.5. SUMMARY

This chapter has introduced two operations (7.2) that can be distinguished according to several criteria. The first criterion concerns the different levels of information that these operations access; in a way it explains their different degrees of productivity. Morphosyntactic operations, covered in 7.3, rely on a different kind of information than morpholexical operations. They are relatively blind to semantics, but apply wherever formal conditions manifested at the argument structure level are fulfilled. Thus, the causative derivation, the subject of 7.3.1, is accessible to all monomorphemic verbs regardless of their event structures and results in predictable changes in argument structure and meaning. The passive alternation, addressed in 7.3.2, is applicable to all verbs having two arguments specified in their argument structure, resulting in a change in valence, but not in meaning and event structure.

CHAPTER 7

A second large section of this chapter, 7.4, has been dedicated to morpholexical operations. As amply demonstrated, these operations, namely the distributive (7.4.1) and iterative (7.4.2) derivations as well as the causative/inchoative, the unexpressed object (7.4.3) and the applicative (7.4.4) alternations, are sensitive to properties encoded at the lexical level. The meanings of the distributive and the iterative seem not only to be sensitive to the event structure templates, but also create concomitant changes in the event structures of the derived verbs. For the distributive and iterative derivations, the possibility of the derivations itself is dependent on the lexical semantics of the verb, or its constant component of meaning, since some events cannot be repeated, and some events cannot be distributed or only in certain ways. Which externally caused verbs can undergo the causative/inchoative alternation is also lexically determined (these verbs were treated separately in chapter 5). The most marked case of a morpholexical operation is present in the unexpressed object alternation and the applicative alternation, which apply only to a handful of verbs.

The second criterion that distinguishes between valence- and/or meaning changing operations concerns the ways in which the processes are marked. Here, the classification cross-cuts the one established on the grounds of structural levels of information. Although synchronically very different from each other in terms of productivity and level-access, the causative, the distributive and the iterative derivations are all formally marked. Their respective markers plausibly have originated all from postpositions that got reanalyzed into preverbs; but the marker with the highest generality, the causative marker, exhibits the lowest degree of lexicalization, whereas the other two, incompatible with certain event descriptions, display properties that set them functionally apart from the causative. Formally marked processes contrast with alternations. One of these alternations, the passive alternation, is cross-linguistically expected to be marked, but is in fact consistently not so in the overwhelming majority of CM languages, even in those that admit an ‘Agent’ by-phrase in the passive clause. The other two alternations, cross-linguistically recognized, are limited to very few verbs.

Thus, processes that arose from diachronically similar operations can have very different scope in the synchronic language, making an analysis relying only on formal properties insufficient. While the processes in question are all derivational in nature, the morphosyntactic processes confirm the large classes determined in terms of lexical argument structure in chapters 3-6, since they concern all lexical items whose argument structure shows the relevant properties. With respect to the

MORPHOSYNTACTIC AND MORPHOLEXICAL OPERATIONS

morpholexical operations, further research is needed in order to look for possible regularities and differences in meaning across verb classes.

The next chapter investigates a split distinguishing between intransitive verbs with respect to the possessive construction in which they occur if nominalized and discusses this split in the context of unaccusativity.

UNACCUSATIVITY¹

CHAPTER 8

8.1. INTRODUCTION

The present chapter investigates a split among intransitive verbs in Jalonke that is manifest in the possessive construction in which these verbs appear when nominalized. The attributive possessive constructions of Jalonke, introduced in 2.6.2 are briefly recapitulated in section 8.2, which also introduces the split among intransitive verbs they diagnose. The split seems to reveal object properties of the single arguments of some intransitive verbs, pointing towards unaccusativity as the phenomenon triggering it. Therefore, section 8.3 gives a brief overview of theories on unaccusativity and introduces the approach pursued here. Section 8.4 looks closer at the possessive construction in which verbs of the different argument structures appear. The chapter ends with a tentative explanation of the phenomenon (8.5) in light of theoretical opinions on unaccusativity, as well as from the perspective of diachronic Western Mande evidence. Two different scenarios for the development of the synchronic behavior of intransitive verbs with respect to possession are proposed. One of the scenarios, suggesting a semantic grounding for the phenomenon, is retained as the most plausible one. A conclusion (8.6) summarizes the findings.

8.2. TWO CLASSES OF INTRANSITIVE VERBS

Jalonke exhibits a formal split of intransitive verbs with respect to the possessive construction in which they appear. Whenever the single argument of a nominalized intransitive verb is linked to the possessor of the nominalized verb, an inalienable possessive construction is used with some verbs, and an alienable possessive construction with others. The inalienable possessive construction is also used for nominalized transitive verbs when possessed by their object participants, while the alienable possessive construction is used for transitive verbs possessed by their subject participants. Although synchronically not fully productive, this split points towards a diachronic explanation in terms of unaccusativity. It can be explained,

¹ *Parts of this chapter appear in Lüpke (accepted).*

CHAPTER 8

however, without recurrence to different initial grammatical relations, but by relying on semantic differences only.

Jalonke has two attributive possessive constructions. Inalienable possession is expressed by the simple juxtaposition of the possessor and the possessum (1), alienable possession by the marker *ma* intervening between the two (2).

- (1) *O xaran -na suu -xi nde o sembe -na 'a.*
 2PL learn -DEF seize -PF INACT 2PL force -DEF with
 'You had studied **with your force**.' Maneah 401

- (2) *N ma xalis -εε min de i?*
 1SG POSS money -DEF where at
 'Where is **my money**?' Ataya 859

Nominalized verbs can occur in these constructions, and it is their behavior that is the subject of this chapter. Transitive nominalized verbs link their object participant to the possessor of an inalienable possessive construction (3) and their subject participant to the possessor of an alienable possessive construction (4).

- (3) *Mux -εε fax -aa mun fan.*
 person -DEF kill -DEF NEG be, nice
 'The **killing of a person** is not nice.'

- (4) *N ma muxi- fax -aa*
 1SG POSS person -kill -DEF
 'My **person-killing** (i.e. the killing of a person)

n na- soo -xi nde kaasoo -n' ii.
 1SG CAUS- enter -PF INACT prison -DEF at
 had made me enter prison.'

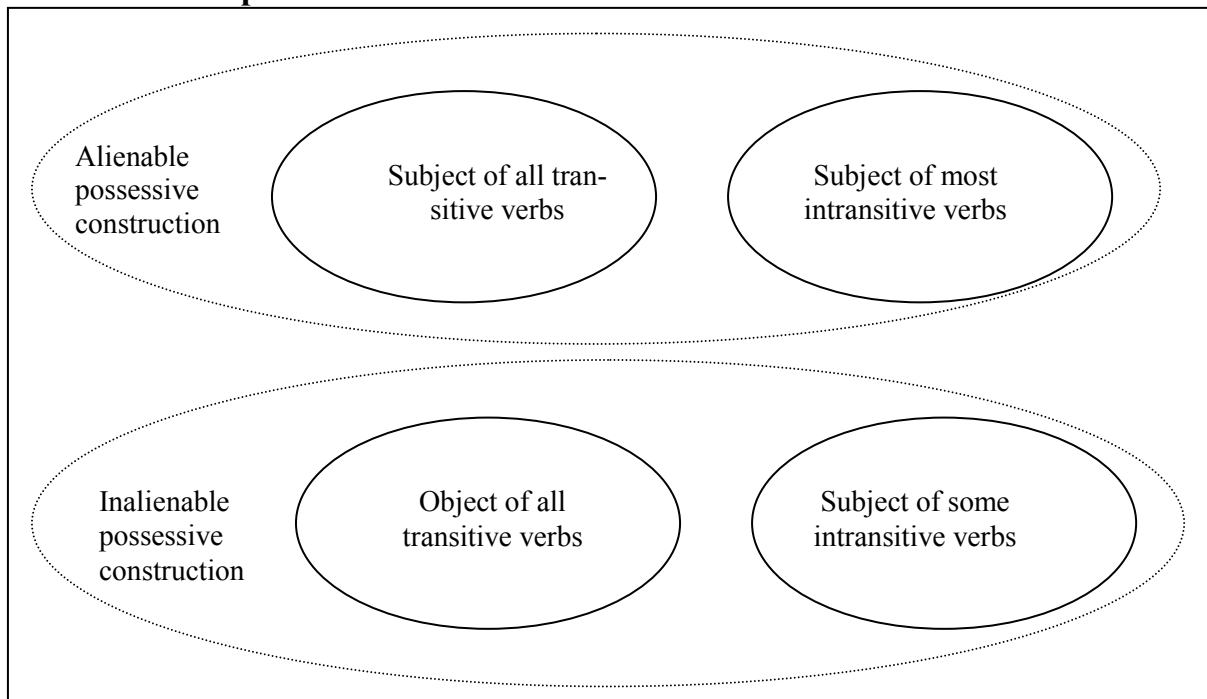
Intransitive nominalized verbs divide into two classes according to this diagnostic, some of them pairing with the subjects of transitive verbs (5), some of them with the objects of transitive verbs (6).

UNACCUSATIVITY

- (5) *N ma karand -εε n na- bɔxun -xi nde.*
 1SG POSS belch -DEF 1SG CAUS- vomit -PF INACT
 ‘My belching had made me vomit.’
- (6) *N faa -na muxi -nee malii -xi nde.*
 1SG come -DEF person -DEF.PL help -PF INACT
 ‘My coming had helped the people.’

Figure 1 summarizes the split according to the possessive construction selected.

Figure 1: Overview of grammatical relations linked to possessors of alienable and inalienable possessive constructions in Jalonke



This split immediately evokes the notion of ‘unaccusativity’ as the determining criterion. An analysis in terms of the unaccusative-unergative distinction (explained in 8.3 below) poses problems, though, because the two classes established on the basis of their possession patterns are not reflected in other syntactic parallels to objects.² Moreover, consultants do not uniformly agree on the admissibility and interpretation of verbs in possessive constructions for exactly the group of verbs that could qualify as unaccusative. This finding points to questions raised in the

² A range of diagnostics has been proposed to confirm unaccusativity, depending on the language(s) (see Kaufmann 1995, Levin & Rappaport Hovav 1995 for an overview). Since the constructions in question either do not exist in Jalonke or do not single out a coherent class of verbs, they are not further discussed here.

cross-linguistic discussion of unaccusativity (see a detailed discussion in section 8.3), as to whether the unaccusative-unergative distinction is a universal one and whether it is a syntactic or semantic distinction. For Jalonke, the answer given in this chapter is that the split is not synchronically productive, but very likely was a **semantically-driven** distinction in the history of the language. Historical evidence concerning the development of synchronic object-verb sequences out of inalienable genitival phrases in Mande languages serve to consolidate this claim. The diachronic evidence leads to two possible scenarios – the first one reanalyzing an initial marking difference motivated by grammatical relations to thematic roles, the second one overriding an originally semantically governed split partly through sensitivity to grammatical relations. Before the evidence for this analysis is laid out in more detail in 8.5, approaches to unaccusativity as a syntactic or semantic phenomenon are sketched in the following sections.

8.3. APPROACHES TO UNACCUSATIVITY

8.3.1. UNACCUSATIVITY AS A DEEP STRUCTURE PHENOMENON

The original proposal of the Unaccusativity Hypothesis as put forward by Perlmutter (1978), although couched in Relational Grammar [RG] terms, contains already much of the substance for later adjustments and reinterpretations in different frameworks. Based on the observation that certain intransitive verbs in a number of languages allow impersonal passives, while others do not, Perlmutter proposes an explanation of the divergences in formal behavior among intransitive verbs in terms of different initial grammatical relations. In RG terms, unergative intransitive verbs have as surface subject an initial 1 (or subject), while unaccusative intransitive verbs have an initial 2 (or object). Although the distinction is based on syntactic differences, Perlmutter claims that it is “predictable from the semantics of the clause” (Perlmutter 1978: 44). Unergative clauses according to Perlmutter comprise activity clauses containing predicates of willed or volitional acts like *work*, *play*, *speak*, *laugh* and *dance*. These clauses further contain manner-of-speaking verbs (*whisper*, *growl*, *blurt out*, etc.) and verbs denoting sounds made by animals, among them *bark*, *chirp* and *meow*. Further, unergative classes include certain involuntary bodily processes like *cough* and *sneeze*. Unaccusative clauses, on the other hand, contain predicates expressed by adjectives in English as well as predicates whose single argument is semantically a ‘Patient’. Among the latter are verbs such *burn*, *fall*, *drop* or *sit* (*involuntarily*), including the large class of inchoative state change verbs like *melt*, *darken*, *die* and *disappear*. Additionally, unaccusative clauses comprise predicates of existing and happening (*exist*, *happen*

and the like) and the non-voluntary emission of stimuli impinging on the senses (*shine, sparkle, stink*, etc.). The unaccusative class further contains aspectual predicates, among them *begin* and *stop* and duratives such as *last* and *stay*. Perlmutter excludes the domain of motion from his classification, stating that it presents too many ambiguities. In general, he underlines that the phenomenon is a matter of the clause, or rather, its interpretation, since animacy of the subject is not a sufficient factor to resolve ambiguities in some languages. For example, the Dutch verb *glijden* ‘slide’ can appear with animate arguments in clauses yielding an agentive interpretation and consequently admit an impersonal passive, which is a formal diagnostic for unergativity in Dutch. *Glijden* can also, however, yield a non-agentive interpretation, rendering an impersonal passive ungrammatical, and hence classifying the verb as unaccusative.

On Perlmutter’s account, unaccusativity manifests itself syntactically but is based on semantic features. Later approaches deviate from the assumption of a semantic motivation, limiting the motivation for the split to base-generated differences in syntactic configurations: Rosen’s (1984) analysis, although equally situated in the RG framework, denies a universal semantic motivation for unaccusativity. Her major objections cite the lack of homogeneity of the two classes across languages and the ambiguity of some verbs that show properties of both classes. Many of these observations have been addressed in later treatments that propose a dual classification for some verbs. Some of Rosen’s arguments, such as the unexpected unergativity of the verb ‘die’ in Choctaw, turned out to be flawed (see Van Valin (1987, 1990) and Levin & Rappaport Hovav (1995) for a detailed argumentation). Rosen’s account is compatible with the Government & Binding treatment of the phenomenon, as presented in Burzio (1986). There, the subject of unaccusative verbs is analyzed as a deep structure object that is forced to move to subject position because it is unable to assign case.

8.3.2. SPLIT INTRANSITIVITY AS A SEMANTIC PHENOMENON

The most radical deviation from accounts that treat the distinction as one of underlying syntax – whether they admit or deny a semantic motivation – is offered by Van Valin (1987, 1990). On Van Valin’s monostratal Role and Reference Grammar account, no underlying syntactic differences determine the unaccusative-unergative distinction. Rather, Van Valin suggests two exclusively semantic parameters that play different roles across languages and constructions. The essence of this analysis is that for some languages, lexical aspect or *Aktionsart* is the deciding criterion for the split. Thus, Van Valin claims that for Italian and Georgian,

only telic verbs (i.e. verbs that denote a change of state with a discrete endpoint) are unaccusatives. Atelic verbs, in contrast, regularly surface as unergatives, very reminiscent of Perlmutter's observation that unergatives denote activities or atelic events. In other languages, for instance Tsova-Tush and Acehnese, the distinction is insensitive to telicity, but is triggered by agentivity. In Dutch, Van Valin argues, impersonal passivization is sensitive to agentivity, whereas auxiliary selection relies on telicity. Hence, no single syntactic phenomenon is responsible for the split. Rather, Van Valin postulates, there are two intersecting syntactic splits which are motivated by Aktionsart and agentivity distinctions built into the verb's lexical semantic representation. These distinctions follow Dowty's (1979) elaboration of Vendler's (1957, 1967) four "time schemata" for verbs (see 1.7.2.1) in accordance with an overarching bifurcation in terms of agentivity.

Similar to Van Valin's analysis is Dowty's (1991) proposal that the class of unaccusative verbs always comprises telic non-agentive verbs, while the class of unergative verbs by default encompasses atelic agentive verbs. Telic agentive verbs and atelic non-agentive verbs can, according to Dowty be grouped differently depending on the most salient sorting criterion employed by the language in question. If this criterion is agentivity or the lack of it, telic agentive verbs will be unergative, and atelic non-agentive verbs will be unaccusative. If the split is one between telic and atelic predicates, telic agentive verbs will end up as unaccusatives, and atelic non-agentive verbs as unergatives.

8.3.3. UNACCUSATIVITY RELYING ON THE FEATURES EXTERNAL VS. INTERNAL CAUSE

In Van Valin's and Dowty's approaches, two classes of verbs emerge as test cases for the features conditioning the split. Agentive telic verbs are expected to be uniformly either unergative or unaccusative. Likewise, non-agentive atelic verbs are supposed to behave uniformly with respect to unaccusativity if the relevant notions for their classification are indeed agentivity and telicity. Agentive telic and non-agentive telic verbs are thus the ideal test cases for Van Valin's And Dowty's analyses.

Levin & Rappaport Hovav (1995), Kennedy & Levin (2001) and Rappaport Hovav & Levin (2000) take an approach to unaccusativity that is based on syntactic differences between unergative and unaccusative verbs. At the same time, their account predicts that these contrasts are motivated in terms of differences in syntactically relevant meaning components. Addressing the problematic cases of telic

agentive and atelic non-agentive verbs, which exhibit variable behavior with respect to unaccusativity and lexical aspect in English, Italian, and Dutch, they propose replacing the notions of agentivity and telicity by related but, in crucial aspects, different notions. In addition, the authors integrate these notions into a number of hierarchically ordered linking rules.

Telicity is substituted by the feature ‘directed change’ in a verb’s event structure, as discussed in 1.7.2.1. This feature is relevant to atelic as well as telic verbs of change of state, thus cross-cutting the traditional notions of lexical aspect in terms of telicity distinctions. A first linking rule, the Directed Change Linking Rule, assures that the argument of a verb that denotes the entity undergoing a directed change will surface as its Theme or ‘direct internal argument’ in the Principles & Parameters terminology. Agentivity is replaced by the feature ‘immediate cause’. This feature builds on the distinction between external and internal causation, exhaustively treated in 1.7.2.2.1. Only internally caused verbs have the feature immediate cause and fall under the scope of the corresponding linking rule. This Immediate Cause Linking Rule determines that the argument corresponding to the immediate cause of the denoted event will end up as its ‘direct external argument’. The Immediate Cause Linking Rule thus correctly assigns the subject role to the external cause arguments of transitive variants of unaccusative verbs and to the single argument of internally caused, hence unergative verbs. Intransitive uncaused variants of externally caused verbs have no immediate cause, and therefore do not have an external argument on this account.

The Directed Change and the Immediate Cause Linking Rules are complemented by a third linking rule, the Default Linking Rule. This rule covers the remaining cases of verbs that encode neither change of state nor are internally caused, like non-agentive verbs of manner of motion. These are predicted by the Default Linking Rule to have a ‘direct internal argument’. A further linking rule, the Existence Linking Rule assures that the participant whose existence is asserted is also linked to an ‘internal argument’. The Existence Linking Rule covers verbs of existence and verbs of spatial configuration in their ‘simple position sense’ (*There were papers lying on the table*) in English.

To summarize, Levin & Rappaport Hovav (1995) and Rappaport Hovav & Levin (2000) use parameters similar to those introduced by Van Valin (1990), but propose a different mode of interaction among them. If verbs encode state change, internal or external causation is irrelevant to their classification, because the Di-

rected Change Linking Rule precedes the Immediate Cause Linking Rule. The presence of a directed change predicts, for example, that English verbs of spatial configuration in their ‘assume position sense’ (*Mandana sat down*) are unaccusatives. These verbs are unaccusative although they are predicated of animate participants likely to control the event, hence to yield an agentive interpretation of the clause – the state change supersedes immediate cause. If verbs do not encode state-change, the presence of an immediate cause argument becomes the crucial criterion for the split. For some verbs, a dual classification, conform to the different syntactic behavior in different readings, is predicted. The verbs in question are the verbs of manner of motion in English. If they have an animate single argument, the Immediate Cause Linking Rule will apply, determining this argument as the internal cause, linking it to the subject slot. If their single argument is inanimate, it cannot be the internal or external cause of the event, so the Immediate Cause Linking Rule cannot apply. Nevertheless, the Default Linking Rule will ensure the linking of the participants of these verbs to a direct internal argument, turning these verbs into unaccusatives.

In the following, split intransitivity in Jalonke will be investigated from the theoretical perspective laid out in the previous paragraphs. Of relevance in this respect is whether the phenomenon bears sufficient resemblance to unaccusativity to be regarded as such, and which account of unaccusativity, if applicable, is supported by the facts of Jalonke.

8.4. VERBS AND POSSESSION IN JALONKE

Nominal possessive constructions in Jalonke create two different kinds of relations between possessor nouns and possessed nouns. Possessive constructions featuring nominalized verbs likewise exploit the two constructions to mirror linking properties of verbs, treating the arguments of some intransitive verbs like the objects of transitive verbs. Whether these differences in linking actually pertain to the level of argument structure or rather to the level of participant structure will be discussed in section 8.5.2. As a prerequisite of this discussion, the following sections investigate the behavior of the different argument structure classes in possessive constructions more closely for Jalonke and other CM languages.

8.4.1. TRANSITIVE VERBS IN THE POSSESSIVE CONSTRUCTIONS

Starting with the uniform verb class with respect to possession, let us look first at the way in which non-alternating transitive verbs appear in the possessive con-

structions. If these verbs occur nominalized as action nouns, they behave similarly to relational nouns and are in most cases possessed. The two possessive constructions they appear in mirror at first sight the grammatical relations of their two respective arguments to the base verb. The subject genitive, encoding the argument corresponding to the verb's **subject** as the dependent of an **alienable** possessive construction, is shown in (7). Example (8) features the object genitive, encoding the argument corresponding to the verb's **object** as the dependent of an **inalienable** construction.

- (7) *N ma banxi- fal -aa n na- tagan -xi nde.*
 1SG POSS house- build -DEF 1SG CAUS- be tired -PF INACT
 'My house-building (i.e. my building of a house) tired me.'

- (8) *Banx -εε fal -aa, tɔɔrɔ -na a xɔn.*
 house -DEF build -DEF suffer -DEF 3SG at
 'The building of a house means suffering.'

The often attested ambiguity of genitival NPs featuring nouns derived from transitive verbs in Indo-European languages – as in the famous example *the killing of the hunters* – does not exist in Jalonke. Not only do the constructions identify which grammatical relation of the nominalized verb functions as the possessor, but an additional factor differentiates between transitive and intransitive verbs. Transitive verbs can only realize their subject as the possessor if they incorporate their object. Thus, in (7), the object *banxi* 'house' is stripped of the definite marker that is otherwise necessary; the omission of the incorporated object would result in ungrammaticality.

Apart from the fact that in the subject genitive of nominalized transitive verbs in Jalonke the object of the base verb is obligatorily incorporated, as 'house' in (7), transitive verbs in Jalonke conform to observations made for other CM languages. These verbs always link the subject of the base verb to the possessor NP of an alienable possessive construction, and the object of the base verb to the possessor NP of an inalienable possessive construction (cf. Creissels 1983a for Mandinka; Dumestre 1994 for Bambara; Platiel 1997 for San, *inter alia*).

Having laid out the way in which transitive verbs link their arguments to the possessor of a possessive construction, let us now turn to intransitive verbs and the patterns they realize in these constructions.

8.4.2. INTRANSITIVE VERBS IN THE POSSESSIVE CONSTRUCTIONS

8.4.2.1. INTRANSITIVE VERBS THAT ARE ALIENABLY POSSESSED

The majority of intransitive verbs in Jalonke treat their subject just as transitive verbs do: it is encoded as the dependent of an alienable possessive construction:

- (9) *N ma dagalan nan n na- bira -xi.*
 1SG POSS stumble FOC 1SG CAUS- fall -PF
 ‘My stumbling has made me fall.’

This is the only pattern attested for intransitive verbs in other CM languages, with one notable exception, discussed in 8.4.2.2 below.

Reflexive-only verbs are only attested in the alienable possessive construction, as illustrated for *gii* ‘run’ below:

- (10) *Holoo a gii -na muxi -nee ra- kwisan -xi.*
 Holoo 3SG run -DEF person -DEF.PL CAUS be astonished -PF
 ‘Holoo’s running has astonished the people.’

8.4.2.2. INTRANSITIVE VERBS THAT ARE INALIENABLY POSSESSED

A small class of nominalized intransitive verbs exhibits a less clear-cut behavior in possessive constructions: for some consultants, these verbs are preferably inalienably possessed; for others, the two possessive constructions are possible.³ This latter class of verbs comprises intransitive-only as well as causative/inchoative alternating verbs. I will start by looking at the intransitive-only verbs that admit inalienable possession before turning to the more complicated case of causative/inchoative verbs.

- (11) *N jin -nee bɔr -ɔɔ n tɔɔɔ -xi nde.*
 1SG tooth -DEF.PL be rotten -DEF 1SG suffer -PF INACT
 ‘The rotting of my teeth had made me suffer.’

³ Although some instances of nominalized verbs in possessive constructions were overheard in natural conversation, no example so far occurs in the corpus. This is not surprising given the small probability that an infrequent construction will show up in a corpus of a limited size, but makes it difficult to judge the variation or to delimit trends.

UNACCUSATIVITY

The intransitive verbs that when possessed appear in the inalienable possessive construction are the following:

Table 1: Intransitive verbs appearing in the inalienable possessive construction

<i>bigi</i>	‘be short, small’
<i>bɔrɔ</i>	‘be moldy, rotten’
<i>bundaa</i>	‘be wet’
<i>fisa</i>	‘be better, surpass’
<i>fori</i>	‘be old’
<i>goo</i>	‘be plenty, abundant’
<i>see</i>	‘ripen, grow, mature’
<i>tagan</i>	‘be tired’
<i>tuu</i>	‘die’
<i>xɔrɔxɔ</i>	‘be hard, be difficult’
<i>faa</i>	‘come’
<i>sigā</i>	‘go’
<i>talū</i>	‘come (honorific)’

These verbs form a subset of the classes of intransitive stative and result verbs introduced in chapter 3. But not all verbs of these semantic classes appear inalienably possessed – most of them follow the majority pattern for intransitive verbs and encode the possessor subject in the alienable construction. One class with diverging behavior is more coherent: all three deictic verbs of inherently directed motion, *faa* ‘come’, *sigā* ‘go’ and *talū* ‘come (honorific)’, are, in contrast to the other verbs of directed motion, exclusively inalienably possessed for some consultants.

The inclusion of the verbs of inherently directed motion in the inalienably possessed class points to the only piece of evidence for the existence of such a class in other CM languages. Kastenholz, in contrast to the majority of Mandeists, states for Koranko (Kastenholz 1987: 235f.) and Bambara (Kastenholz 1998: 65f.) that **all** intransitive verbs occur in the inalienable construction. For Bambara, this claim is in contradiction to the opinion of Dumestre (1994). The one verb Kastenholz uses to illustrate this postulate in the two languages is ‘go’, maybe not accidentally one of the verbs of inherently directed motion that are inalienably possessed in Jalonke, too. Since most descriptions of CM languages make only cursory statements about verbal nouns in attributive possessive constructions, if at all, detailed studies

might reveal more variation within the class of intransitive verbs than is generally assumed so far.⁴

A second group of verbs that can be inalienably possessed consists of many, but not all, causative/inchoative verbs (see chapter 5):

Table 2: Causative/inchoative verbs appearing in the inalienable possessive construction

<i>bira</i>	‘fall’
<i>dali</i>	‘get used to’
<i>dɔxɔ</i>	‘sit (down)’
<i>fiiɛ</i>	‘be white’
<i>fɔɔrɔ</i>	‘be black’
<i>gira</i>	‘break, crush’
<i>nɔxɔ</i>	‘dirty’
<i>ɲɛn</i>	‘end, stop’
<i>saa</i>	‘lie (down)’
<i>sindon</i>	‘hang (up)’
<i>tii</i>	‘stand (up)’
<i>tɔɔrɔ</i>	‘suffer’

Not inalienably possessed in intransitive uses are the following causative/inchoative alternating verbs: the phasal verbs *ɲɛn* ‘end, stop’, *fɔlɔ* ‘start, begin’ and *luu* ‘cease, stop, stay, remain’, and a number of other causative/inchoative verbs – *findi* ‘transform’, *fura* ‘be hot’, *kafu* ‘add, associate’, *rabii* ‘open’, *sɔrɔn* ‘fall’, *soo* ‘enter’ and *tilin* ‘be deep’. All remaining causative/inchoative verbs can appear in the inalienable possessive construction. This is in itself not surprising, since these verbs all have a transitive causative counterpart and are expected to encode the object genitive in the inalienable possessive construction. The picture gets more complicated when it comes to their inchoative alternants. Here, for some consultants, the inalienable construction is used to encode their single argument as the possessor, but for others, the alienable construction is used. At first sight, this variation looks as though it is straightfor-

⁴ An additional hint for split intransitivity, although not diagnosed through possessive constructions, comes from the Southwestern Mande language Mende. Innes (1962) reports that Mende verbs mutate their initial consonant if preceded by a plural object. Some intransitive verbs (analyzed by Innes as having zero objects) undergo consonant mutation if they have a plural subject, among them ‘fall’, ‘come’, ‘go’, ‘finish’ and ‘run’.

wardly determined by the two different readings of the verb. So, for some consultants, the alienably possessed deverbal noun results in a subject interpretation of the possessor in (12), while the inalienably possessed verbal noun triggers an object interpretation of the possessor in (13).

- (12) *Fura -mux -na a saa -na jire keden i*
 be sick -person -DEF POSS lie -DEF place one at
 ‘The sick person’s lying (down) at the same place

mun fan a be.
 NEG be pleasant 3SG for
 is not pleasant to him.’

- (13) *Fura -mux -εε saa -na jire keden i*
 be sick -person -DEF lie -DEF place one at
 ‘The sick person’s having been lain (down) at the same place

mun fan a be.
 NEG be pleasant 3SG for
 is not pleasant to him.’

The contrast between the two examples above would then reflect the different thematic roles of the possessors resulting in their linking to different grammatical relations. In (12), the sick person’s active lying down is referred to; in (13), in contrast, he has been lain down. Most consultants who use the inalienable possessive construction for these verbs do not accept the alienable construction on any reading, however. For these consultants, the result is that the structural ambiguity attested for causative/inchoative verbs in intransitive clauses holds for their interpretation in genitival phrases. Consider (14) and (15).

- (14) *Baterii -na saa -na boxi -n’ ii*
 battery -DEF lie -DEF ground -DEF at
 ‘The battery’s lying on the ground

a kana -aa nde.
 3SG destroy -IPFV INACT
 will destroy it.’

- (15) *Burex* -εε *sindon* *nan* *sii* -na *təɔrə* -xi *nde*.
 leaf -DEF hang FOC goat -DEF suffer -PF INACT
 ‘The hanging of the leaf bothered the goat (Because it couldn’t reach it).’

For (14), some consultants rule out a subject interpretation of the possessor NP, but others are undecided between an object or subject interpretation. Both readings are equally plausible for (14) – somebody may have put the battery on the ground, but it also may have fallen down. For (15), however, it is inconceivable that the leaves were put on the tree (if we leave Allah aside for once). In Levin & Rappaport Hovav’s (1995) terms, *saa* ‘lie’ and *sindon* ‘hang’ in (14) and (15) manifest the ‘simple position sense’ of verbs of spatial configuration. Verbs of spatial configuration in this sense are unaccusative in English and can be contrasted with agentive senses of these verbs like the ‘maintain position sense’, unergative under their definition, and the ‘assume position sense’, unaccusative on their account. As pointed out in detail in 5.4.3, the different senses of verbs of spatial configuration cannot be distinguished formally in Jalonke. In consequence, there is no reason to differentiate between agentive senses like in (12) and (13) and non-agentive ones like in (14) and (15) on the grounds of different lexical semantic representations – the verbs all encode directed change but are ambiguous in contexts that do not syntactically spell out the external cause between an uncaused and externally caused passive reading.

An issue to consider is that not all intransitive and causative/inchoative alternating verbs of change of state appear inalienably possessed, hence are unaccusative verbs. It will be argued in 8.5.1 below that this is an index for the phenomenon not being productive anymore in the present-day language. An alternative account would be, however, to find a criterion that distinguishes the alienably possessed verbs of change of state from the inalienably possessed ones. At least for the intransitive verbs in this group, such an alternative would be to regard them as internally caused. The existence of internally caused verbs of change of state was argued against in 1.7.2.2.2, and on Levin & Rappaport Hovav’s account these verbs would have to be unaccusatives in any case, because the Directed Change Linking Rule (see 8.3.3) precedes the Immediate Cause Linking Rule. It might be the case, nevertheless, that these verbs, if internally caused, would fall under the scope of the Immediate Cause linking rule if it were assumed that this rule precedes the Directed Change Linking rule in Jalonke. Such an analysis is not adopted here, though. Intransitive verbs of change of state that are not inalienably possessed offer no evidence of being different in any respect from those that are. More

importantly, the causative/inchoative alternating verbs that are not inalienably possessed on intransitive readings are not distinguishable from other causative/inchoative alternating or intransitive verbs of change of states that are inalienably possessed. Therefore, internal causation as a possible motivation for not inalienably possessed verbs is not further pursued here.

8.4.3. SUMMARY ON VERBS AND POSSESSION

The preceding sections have examined a split that divides intransitive verbs into two classes. A large group of nominalized intransitive verbs encodes their subject in an alienable possessive construction, analogous to the subjects of transitive verbs. A smaller group of intransitive and causative/inchoative alternating verbs encodes their subject in an inalienable possessive construction and parallels the encoding of transitive objects. It has been shown that the intransitive verbs whose single argument seems to have some object properties with respect to the diagnostic alienable vs. inalienable possession are a subset of verbs of change of state. The participant affected by inalienable possession is hence a Theme. In the following, an explanation will be attempted for this phenomenon.

8.5. A TENTATIVE EXPLANATION

8.5.1. A SYNCHRONIC OR DIACHRONIC PHENOMENON?

It is, of course, somewhat daring to propose an explanation for a phenomenon that seems to be in the course of losing productivity in a language without historical records. There are, however, several principles underlying the variation concerning intransitive and causative/inchoative verbs that point towards a (necessarily tentative) explanation. The verbs that are attributed different possessive patterns by different speakers, but **can** occur in the inalienable possessive construction, are subsets of two verb classes. They all belong to the intransitive-only verbs of (change of) state and to the causative/inchoative alternating verbs of change of state. That only some of them – and only for some speakers – appear inalienably possessed could be due to two different factors, which I will discuss in turn.

One possible explanation is that a formerly consistent contrast between verbs, manifesting itself in their possession patterns, is getting blurred synchronically. Facts supporting this scenario are that the group of inalienably possessed verbs does not coincide with the class of stative verbs with state-change readings and causative/inchoative alternating verbs, but only with a subset of them, and that not all speakers realize the subjects of these verbs as the possessors of an inalienable possessive construction. To what degree speakers who use these verbs as inaliena-

bly possessed exhibit a more conservative attitude than others, whether the retention of the split is a matter of age, social background, and/or multilingualism in Fula and French, and whether it concerns only the most frequent verbs, remain questions for further research.

A different possibility is that the subset of intransitive verbs that is inalienably possessed has syntactically relevant components of meaning that differentiate it from the larger groups of verbs of change of state and causative/inchoative alternating verbs. Although all verbs were tested with respect to morphosyntactic criteria that could differentiate among them, no such differences were found.

Thus, at the present stage, it seems plausible to extrapolate from the synchronic variation that at an earlier stage the inalienable possessive construction had a wider extension over intransitive verbs and that it encompassed exactly the two classes of intransitive verbs of change of state and of causative/inchoative alternating verbs.

8.5.2. A SYNTACTIC OR SEMANTIC PHENOMENON?

If what seems to be the safest assumption holds, we are dealing with a shift in progress, for which at best a diachronic motivation can be proposed. At least historically it is highly probable that semantically consistent classes of verbs appeared in the inalienable possessive construction. These verbs were intransitive verbs of change of state or result verbs and the inchoative alternants of externally caused verbs, also denoting changes of state. It still remains to be examined whether it can be elucidated what motivated the split initially. Two broad hypotheses, as mentioned above, are at hand:

- (i) A grounding of unaccusativity in differences in initial grammatical relations, or in syntactic differences, whether these differences can be semantically motivated or not
- (ii) A grounding of unaccusativity in differences in thematic roles, hence a purely semantic motivation

The following paragraphs inspect both hypotheses more closely.

(i) Unaccusativity in Jalonke as syntactically conditioned. If a syntactic approach were the adequate one, the motivation of split intransitivity could have stemmed in part from the factors defined by Rappaport Hovav & Levin (2000). All the verbs in question denote directed change of state or location. Their linking

would then be determined by the Directed Change Linking Rule. Some of them, the causative/inchoative alternating verbs, can also have an external cause argument, which could, in accordance with the Immediate Cause Linking Rule, end up as the external argument of the transitive alternants of these verbs. A Default Linking Rule for non-agentive verbs of manner of motion and an Existence Linking Rule for verbs of existence and appearance would not be needed for Jalonke. Thus, in agreement with Levin & Rappaport Hovav's and Rappaport Hovav & Levin's approach, one might argue that unaccusativity in Jalonke was at some point syntactically encoded, based on the initial grammatical relation which the single argument bears to the verb. The split would still be semantically determined, since the grammatical relation is determined by the Directed Change and Immediate Cause Linking Rules and thus ultimately dependent on participant structure features of the verbs.

In agreement with a syntactic account at first sight are parallels often noted between objecthood and inalienable possession. As Klimov (1974) notes for active-stative languages and Seiler (1983) for Amerindian languages, many of which belong to the active-stative language type, there is an affinity between object marking and inalienable possession for languages that make that distinction. These languages tend to use the same pronominal affixes in inalienable possessive constructions that appear as object affixes on the verb, and subject affixes in alienable possessive constructions. For Seiler, the motivation for this affinity lies in the distinction between inherent and established possession. Inalienable and objective relations do not need to be established; they are given, hence coded in the same way. Alienable and subjective relations need to be established, and so are marked differently.

Similarly, for Mande languages there is substantial evidence that object-verbs sequences originated as inalienably possessed NPs, and that a new clause structure arose from reanalysis of complement-taking predicates with possessed-nominal complements (as laid out in the context of Mande word order 2.2.2). What can such a hypothesized diachronic development, in combination with the lexical semantics of the verbs, tell us about the grounding of unaccusativity in Jalonke? One possible explanation is that the arguments corresponding to synchronic objects were realized as inalienably possessed verbal nouns because the relation of objects to nominalized verbs was viewed as more inherent than the relation of subjects. It is a widely accepted fact for most contemporary theories of argument structure that the 'external argument' or subject has a different status than the 'internal argument'

(see Kratzer 1996 for an overview). Some researchers, like Kratzer, go even as far as denying the ‘external argument’ its argument status altogether. Independently of the status of arguments, it was noted by Lehmann (1982a) and Comrie & Thompson (1985) that many languages allow either only the subject or only the object of a nominalized verb in a possessive construction, not allowing the expression of both as in English (*the enemy’s destruction of the city*). For Lehmann, it is a concomitant fact of strong nominalization, i.e. loss of verbal relationality, that the object is expressed as the possessor. These findings are reflected by the facts of Jalonke, where only one argument can appear as the possessor of a possessive construction, and for transitive verbs, the argument encoded in the inalienable possessive construction is always the object. Thus, the distinction originally may have been one between subjects and objects. Then, the inalienable possessive construction would initially have applied to objects only. Its extension to the Theme participants of intransitive verbs might be due to them being underlying objects.

A second scenario is also possible as an explanation of unaccusativity in Jalonke. This scenario starts out from a syntactic grounding of the split that was then reanalyzed to a semantic distinction. Let us assume that objects arose out of inalienable possessive NPs, and that this origin is echoed by the possessive construction in which nominalized transitive verbs realize their objects. It is, however, plausible that the inalienable pattern extended to intransitive verbs based on participant features instead of underlying differences in grammatical relation. The existence of alternating transitive verbs would then have served as a bridging context for the inalienable construction’s invasion of intransitive territory. For causative/inchoative alternating verbs, one and the same thematic role is either linked to subject or object. If consequently these verbs always encoded their Theme, regardless of the grammatical relation it bore to the verb, as the possessor of an inalienable possessive construction, a motivation was born to treat all Themes in the same way. Accordingly, the inalienable possessive construction would have been extended to all nominalized verbs of change of state on semantic grounds. Thus, a diachronic development starting in differences in overt or underlying grammatical relations, then reanalyzed to respond to thematic roles rather than to grammatical relations is an additional possible scenario.

(ii) Unaccusativity in Jalonke as semantically conditioned. It is, however, equally plausible to assume that the distinction started out – and still is, as far as it is productive – as sensitive to thematic roles instead of grammatical relations. Since it is Theme participants that in the overwhelming majority of cases are

linked to object, the inalienable possessive construction might well have covered all Themes initially. A Theme is inherent to a change of state, being essential to the event as one of change of state, whereas the Effector is inherent to the causation of a change of state. It is possible to construe a change of state without causation, hence without an Effector or external cause element, but not without a Theme participant undergoing the change of state. This tight bond of the Theme participant to the event denoted by a verb is in direct analogy to the tight bond between possessor and possessum in the inalienable possessive construction. Thus, it would not be objects that were initially encoded as the possessors of an inalienable possessive construction, but inherent participants of the denoted event, or Themes. These Themes were linked to objects at a later stage in the development of Mande languages when the possessive constructions were reanalyzed to OV-sequences. This second scenario, if proven accurate, would offer evidence in favor of unaccusativity as a semantic, not a syntactic phenomenon. In view of the synchronically alive semantic motivation for nominal possessive constructions the scenario is a very plausible one. Nominal possessive constructions (cf. 2.6.2) are sensitive to the distinction between inherent and established relations, just as Themes are inherent to a change of state, whereas external causes are not.

Whichever scenario was at work in the language, it seems safe to state that the inalienable construction started out as encoding possessors of all kinds of relations construed as inherent, be they relations between nouns or between nouns and nominalized verbs. The conceptual motivations for initially choosing the inalienable construction, denoting inherent relations, may have resided in the grammatical relation of the argument corresponding to the possessor, singling out the object rather than the subject for the inalienable construction, and hence speaking in favor of the distinction between external and internal arguments. The distinction may also have been sensitive to the thematic role of the possessor, viewing Themes as more inherent and internal to a change of state than Effectors. The latter motivation seems more convincing in light of the facts. Which motivation is ultimately the most convincing, however, and to what degree it can be corroborated through comparative work on Mande languages, remains a question for further research.

8.6. SUMMARY

This chapter has explored a phenomenon not attested so far for other CM languages: the variable behavior of intransitive verbs with respect to possession. An introduction to the phenomenon was given in 8.2. A number of intransitive verbs when nominalized encode their single argument as the possessor of an inalienable

possessive construction, just like transitive objects. Since this parallel in syntactic behavior of some intransitive subjects to transitive objects evokes the notion of unaccusativity, section 8.3 has set out to sketch approaches to unaccusativity. It has been shown that intransitive verbs whose single arguments behave parallel to the objects of transitive verbs in possessive construction are best explained in terms of unaccusativity. It has further been demonstrated that the features proposed by Kennedy & Levin (2001), Levin & Rappaport Hovav (1995), and Rappaport Hovav & Levin (2000) to a large degree serve to capture the properties responsible for the unergative-unaccusative split. Many intransitive verbs that encode a directed change of state end up as unaccusative verbs in Jalonke, as described in 8.4. It has also been stated in 8.5, however, that the phenomenon is not completely regular semantically, which entails two possible solutions: the first possibility would be to describe unaccusative verbs in purely syntactic terms, as proposed by Rosen (1984). The second solution would be to view unaccusative verbs as a vestigial class of verbs that once fulfilled the relevant semantic criteria to be unaccusatives, and hence to extrapolate from the synchronic findings to a postulated diachronic regularity that treated all verbs of change of state in the same way. This latter account would still have to test whether the split is syntactically grounded, even if semantically motivated, or explainable in purely semantic terms, faithful to Van Valin's (1987, 1990) proposal. Both scenarios and their possible diachronic development were discussed, and two scenarios were offered. The first scenario would have been, at least initially, sensitive to underlying differences in grammatical relations, relying on the affinities between objects as internal arguments and inalienable possessors. This initial state of affairs could have served as a starting point for the extension of the inalienable construction over some intransitive verbs. If causative/inchoative alternating verbs started to link their Theme role to a subject genitive, the road was free for base intransitive verbs to appear in a possessive construction sensitive to thematic roles rather than to grammatical relations.

The second scenario would have taken differences in thematic relations as the starting point – Themes would have been seen as participants inherent to a change of state, analogous to inalienable possessors. This scenario seems to be the more promising one in the light of objects arising out of inalienable possessors in Mande languages. Yet, some hedging is in order. Regardless of the original motivation for split intransitivity, we are left with the finding that in present-day Jalonke, a number of verbs fulfilling the criteria for either analysis do not encode their single argument as the possessor of an inalienable possessive construction. It is thus clear that the diachronic argument must remain speculative at the moment: more re-

search on Jalonke, on Yalunka and on Mande languages in general is necessary to confirm or refute the scenarios proposed here.

The following chapter again looks at the major argument structure classes of Jalonke, but this time from a quantitative perspective. It investigates how the classes based on morphosyntactic features in the previous chapters are confirmed through patterns of argument realization in discourse.

ARGUMENT REALIZATION IN DISCOURSE

CHAPTER 9

9.1. INTRODUCTION

In contrast to the other core chapters, this chapter addresses the issue of argument structure not from a lexical, but from a discourse perspective. Based on a quantitative study of the natural discourse of 30 speakers, covering different genres and topics, the chapter investigates how often speakers realize all arguments of a given verb type in discourse, and how often and for which reasons arguments are omitted or added. It is then examined to what degree argument realization varies according to genre, speaker, and verb type.

The quantitative study is motivated by possible alternatives to the analyses proposed so far for Jalonke and more generally languages of the Central Mande group. The issues at hand are:

(i) The verification of the language-internal analysis of Jalonke argument structure classes, specifically in the light of alternative accounts for closely related languages

The quantitative study is also considered necessary in order to address more general typological and theoretical issues. These issues comprise:

(ii) The investigation of the availability of argument ellipsis. Languages are known to vary not only with respect to the scope of omission of arguments, but also concerning the parameters governing their omissibility.

(iii) The assessment of the level of information structure at which the number of arguments is specified. Constructional approaches to argument structure regard the construction as the relevant level, whereas projectionist (lexicalist) approaches assume that argument structure is specified at the lexical level.

CHAPTER 9

(iv) The confirmation of the existence of lexical argument structure as a property of verbs reflected in discourse. Recent approaches regard the notion of lexical argument structure as irrelevant, finding that discourse shows a huge variation in the syntactic possibilities of verbs and is inclined to exhibit mainly one-participant clauses.

These motivations for the quantitative study are introduced in detail in 9.2. The remaining parts of the chapter are organized as follows. Section 9.3 describes the sample, lists and defines the genres included (9.3.1), and identifies the categories of analysis (9.3.2). Section 9.4 is concerned with the findings from the overall sample. The distribution of argument structure classes is the subject of 9.4.1, and the distribution of syntactic valence classes is looked at in 9.4.2. Section 9.4.3 examines the distribution of alternating and non-alternating verb tokens in the overall sample. The correspondence between argument structure classes and valence classes is investigated in 9.4.4, and in 9.4.5 it is explored how alternating and non-alternating tokens can account for the verb tokens of a given argument structure class. A study of the 20 overall most frequent verbs follows in 9.4.6, before a discussion of the findings in 9.4.7 closes the scrutinization of the overall sample. Section 9.5 looks at the variation in argument structure classes and valence across genres and inspects the distribution of verbal and non-verbal predications (9.5.1), of valence patterns (9.5.2), and of alternations (9.5.3) over the different genres. Section 9.5.4 and its subsections look at all the individual genres, describe their argument structure and valence patterns, the most frequent verb tokens and discuss some of their properties. Section 9.6 studies variation across speakers (9.6.1) and texts (9.6.2), and discusses the findings from this comparison in 9.6.3. A summary (9.7) reviews the main findings.

9.2. BACKGROUND TO THE STUDY

As stated above, four different, but related motivations underlie the quantitative study. Let us start this section by tackling them one by one.

(i) The verification of the language-internal analysis of Jalonke argument structure classes. This motivation is pertinent to the language-individual analysis of Jalonke verbs in terms of basic lexical argument structure and alternations from this basic argument structure presented in chapters 3-7. This motivation is also relevant in order to test proposals adopting different points of view for other CM languages. The Jalonke analysis hinges crucially on three points. These points are:

ARGUMENT REALIZATION IN DISCOURSE

- The validity of a passive analysis for transitive verbs suppressing their Effector and mapping their Theme to subject
- The limitation of other valence-decreasing and valence-increasing alternations to cases where no ambiguity between passive and other alternations could arise
- The absence of argument ellipsis which might create massive structural ambiguities

If the analysis advocated so far is valid, verbs should occur significantly more frequently with the number of arguments specified by their lexical argument structure than in other syntactic configurations. Moreover, if verbs appear in syntactic configurations or valence patterns other than their base argument structure, this syntactic configuration should be recognizable as one of the alternations identified for the language. Furthermore, only those verbs should appear in the unexpressed object alternation that through their participant structure disambiguate passive from active reading with an unexpressed object. Likewise, the applicative alternation should be limited in its range over verb types and frequency. If intransitive verbs participating in the alternation would regularly have transitive applicative uses, an active reading for the intransitive alternants of these verbs would be confusing. These intransitive verbs, if occurring as often with two arguments as with one argument, would blur the morphosyntactic criteria concomitant of lexical argument structure. If the verbs were considered transitive, the fact that transitive verbs can have both active and passive intransitive readings would create massive structural ambiguity and make a classification of verbs based on lexical argument structure questionable. If the verbs were considered intransitive, the admissibility of transitive readings for some, but not all, intransitive verbs would create an overlap between argument structure classes that would invalidate the admission of such classes.

In short, any omission of arguments in contexts other than those licensed by alternations should not occur. If omission of arguments would occur elsewhere, the language would better be analyzed as allowing massive argument ellipsis or pro-drop. Consequently, Jalonke verbs would have to be classified as labile (or on the basis of the number of arguments they minimally or maximally combine with), rather than as specifying the number and role of participants lexically. This issue is also relevant to alternative accounts from within the language group to which Jalonke belongs. These accounts are intimately linked to the admittance vs. the denial of a lexical argument structure and of alternations as determining a deviation from it. There are approaches to other Mande languages that reject the existence of a lexical argument structure (Creissels 1983a for Mandinka) or analyze lexical ar-

gument structure as independent of valence and classify verbs based on their minimal valence (Tröbs 1998 for Jeli). For both approaches, see a detailed account in 7.3.2.1. These views lead to very different expectations for discourse realization of arguments. On Creissels' account, no alignment whatsoever between the number of lexically specified arguments and the number of syntactically realized arguments is expected, since there is no such thing as lexical argument structure in the first place that could be matched by the clause. By coding for – independently established – lexical argument structure and for the number of realized arguments for a given verb token in the quantitative study, it can be verified whether Creissels' account is borne out for Jalonke or not. On Creissels' account, lexical argument structure as an independent variable to be tested against argument realization is nonexistent. Even so, a strong correspondence between the number of arguments predicted by morphosyntactic properties and the number of arguments occurring with that verb would favor the admission of such a lexical argument structure. The absence of such a correspondence in contrast would favor a lability account. Tröbs contends for Jeli that the number of 'obligatory' (= minimal syntactic) arguments is one less than the number of 'optional' (= maximal syntactic) arguments. This alleged divergence leads him to a classification of verbs based on minimal syntactic valence. Again, the contrastive assessment of either of the two classificatory criteria – lexical argument structure and syntactic valence – allows testing whether this situation holds for Jalonke. If verbs with maximally two arguments were at best optionally transitive (or 'pseudotransitive', as he calls them), because they appear with only one obligatory argument, we would expect them to appear roughly, and, more importantly, randomly, as often with only one argument as with two arguments.

(ii) The investigation of the availability of argument ellipsis. This second motivation pertains to other possible reasons for 'misalignment' between lexical argument structure and the number of realized arguments cross-linguistically. Languages differ considerably with respect to the variation in valence that they exhibit, and with respect to the parameters that determine this variation. Languages like English and French, or 'hot' languages¹ in the typology developed by Huang (1984, 1989) only allow zero pronouns in the subject position of nonfinite or ge-

¹ *The classification of languages into 'hot' and 'cool' languages is based on Marshall McLuhan's (1964) bipartition of media according to the active participation they require. Hot media like television require less active participation than cool media like the telephone. This dichotomy refined by the addition of the 'medium-hot' type and applied to anaphoric reference by Huang (1984).*

rundive clauses, or PRO locations in the terminology of Chomsky (1981). The impossibility of omitting arguments from finite clauses – a phenomenon referred to as pro-drop, empty pronoun, null subject/object, zero anaphora, or argument ellipsis in different traditions – is generally explained through the ‘meager’ verbal agreement in these languages. An omitted argument would not be recoverable from the inflectional morphology of the verb. Recoverability through verbal agreement also underlies argument ellipsis in ‘medium-hot’ languages (Huang 1984). Languages of this type, like Italian and Spanish, have a richer agreement marking and consequently allow the omission of the argument with which the verb agrees in finite clauses. A third type of language, termed ‘cool’ languages by Huang (1984), does not conform to the recoverability parameter based on the information contained in verbal agreement. ‘Cool’ languages comprise languages without agreement, such as Chinese, Japanese and Korean, that nevertheless allow the free omission of arguments from finite clauses. In these languages, discourse-pragmatic parameters like topicality, givenness, etc., are argued to govern argument ellipsis (Huang 1984, 1989, Li 1997, Li & Thompson 1979, Pu 1997). Without the clarifying discourse context, massive structural ambiguity arises in these languages. Jalonke, like the East Asian languages mentioned, has no verbal agreement. If the language presents mismatches between independently identified lexical argument structure and the number of syntactically present arguments, the question thus arises whether this non-correspondence is due to argument ellipsis in certain discourse-pragmatic contexts or to alternations licensed by the language. In the former case, the prediction would be that alternations cannot, or only to a limited degree, account for the mismatches between lexical argument structure and syntactic valence. In the latter case, we would expect that all mismatches can be resolved through alternations. In that case, Jalonke would pair with ‘hot’ languages like English, and not with ‘cool’ languages like Chinese.²

² Bickel (2003) and Noonan (2003) set out to investigate ‘referential density’, i.e. the ratio between possible and present arguments beyond the context of argument ellipsis. Their aim is to arrive at a typology of languages with respect to them paying more attention to events, lexicalized in verbs, or to participants, lexicalized in nouns and corresponding to arguments. They further want to investigate whether areal or genetic features determine referential density. Bickel’s pilot study yields important results in revealing huge differences in referential density in the three pro-drop languages Belhare, Nepali and Maithili. Bickel’s and Noonan’s method, however, differs from the one employed in this thesis, which is to define possible arguments on the basis of language-individual morphosyntactic criteria. Bickel and Noonan determine possible arguments of verbs on a universal notional basis, assuming identical sets of participants for translation equivalents of verbs. Thus, verbs of motion cross-linguistically always would have a Figure and Goal or Source as participants, hence have two possible arguments, and verbs of transfer are ex-

(iii) The assessment of the level of information structure at which the number of arguments is specified. This third motivation for the study comes from approaches that downgrade the importance of lexical argument structure as predicting the number of present arguments in discourse. Most prominent in this regard is the Goldbergian version of Construction Grammar (Goldberg 1995, 1997, 2002, 2003). Rather than treating verbs with different syntactic configurations as polysemous, linked by alternations, Goldberg attributes one general sense to verbs. She treats argument structure not as a property of verbs, but as a property of the constructions in which these verbs occur. Goldberg thus focuses on a polysemy network among constructions rather than among verbs. Differing from projectionist approaches to argument structure (cf. 1.7.2.4) in the level of information structure at which the number of arguments is specified, constructionalist approaches nevertheless rely on the presence of information about a verb's arguments at some level of information structure, just as projectionist approaches do. It demands further research to ultimately determine at which level – lexical or constructional – the number of arguments present in the clause is specified – and how lexical and constructional meaning interact. The contrasting analyses for English in terms of an account based on information contained in verbs and alternations, as in projectionist accounts, vs. in terms of information contained in constructions and inheritance relations among them, indicates that this issue is not resolved. Nevertheless, it is an empirical question whether all languages lend themselves equally well to a constructional as well as to a projectionist analysis. English seems to be a notorious case with respect to the wide range of syntactic realizations for verbs – it should not be ruled out that some languages pose stronger restrictions on syntactic options for verbs. If a language accords more importance to constructions, one would expect a great deal of variation. For languages more geared towards the projection of arguments from their event structure into syntax, in contrast, one would anticipate a stronger predictability of the number of arguments from a lexical semantic representation, hence a more predictable degree of variation.³

pected to have three possible arguments. Such a view, based on notional universals and very reminiscent of Gleitman (1990) is problematic and has been criticized in Wilkins (in prep.), because languages differ considerably with respect to the participant structures of notionally similar verbs.

³ *It is plausible that the consideration of participants encoded in adpositional phrases for Jalonke would be a more crucial test case for the limits of projection and the contribution of constructional meaning than a contemplation of direct arguments only. These participants cross-linguistically pose problems for the argument-adjunct distinction, and their linking presents considerable variation in Jalonke and other languages (see 4.6) This, however, must remain a subject of future investigation.*

(iv) **The confirmation of the existence of lexical argument structure as a property of verbs reflected in discourse.** This fourth and final motivation stems from the presence of discourse-based approaches that question argument structure altogether. Thompson & Hopper (2001), basing their claims on a study of 446 clauses of an English conversation, question the very notion of lexical argument structure, at least as far as its reflection in discourse patterns is concerned. They find that 73%, or 325 of the clauses in their sample, are one-participant clauses and that only 27%, or 121 clauses, are two-participant clauses. Only 38% of the clauses, however, contain verbal predicates, the remaining clauses of the sample consisting of copular clauses (37%) ‘epistemic/evidential’ predicates (14%) and idioms or ‘dispersed predicates’ (11%). Citing converging evidence from four other languages, they come to the conclusion that it is safe to extrapolate the following from the distribution of one- and two-participant clauses in discourse. Conversation in general is very low in ‘Transitivity’⁴ and the traditional notion of lexical argument structure needs to be questioned, since “the majority of the predicates in the data do not lend themselves to being described in terms of a distinction between those taking one vs. those taking more than one argument” (Thompson & Hopper 2001: 46). The essence of their claims is that

(a) In contrast to the highly Transitive examples which form the basis of most discussions of clause grammar, including argument structure, case-marking, person-marking, and voice, ordinary conversation abounds in clauses of very low Transitivity, typically consisting of only one participant.

(b) The data from English conversation provide robust support for the view that predicates within a language differ widely, partly because of their differential frequency, in how clearly they specify what arguments they can go with.

(c) Much of everyday conversation consists of one-participant clauses and prefabricated constructions and expressions, challenging the idea, popular in discussions

⁴ Thompson & Hopper (2001) use ‘Transitivity’ (a semantic phenomenon as opposed to transitivity as a syntactic phenomenon) as a multidimensional phenomenon not only relying on the number of arguments, but also on semantic features, introduced by Hopper & Thompson (1980). In their 2001 study, they differentiate further among two-participant clauses to what degree they instantiate cases of high or low Transitivity according to their 1980 parameters. I do not make use of this finer-grained scale because it is not relevant to valence as based on the number of arguments present and contrast only their counts of syntactically present participants with the syntactically present participants for verbs of a given lexical argument structure in Jalonke.

CHAPTER 9

of argument structure, that verbs ‘choose’ the arguments that go with them.
(Thompson & Hopper 2001: 54)

Thompson & Hopper furthermore predict that “the more frequent a verb is, the less likely it is to have any fixed number of ‘argument structures’” (2001: 49). It is problematic to assess Thompson & Hopper’s contentions systematically, since in their study, they only take clause-level valence into consideration. It is therefore impossible to judge whether the relatively high number of one-participant clauses comes about just simply because the sample contained a high percentage of lexically intransitive verbs. Likewise, using their methodology, the possibility of determining to what degree recognized alternations of English could be responsible for a mismatch between lexical argument structure and syntactic realization of arguments is ruled out. Since lexical argument structure is not coded for in their sample, it cannot be measured against argument realization. Their argument is thus flawed through the absence of empirical evidence showing that indeed the high number of one-participant clauses invalidates the notion of lexical argument structure. Nevertheless, their predictions of the absence of any regular patterns for face-to-face conversation as a genre cross-linguistically are strong enough to be considered for Jalonke. If Thompson & Hopper’s assumptions were applicable to Jalonke, one would expect a low number of arguments for a given verb. One would not expect the number of arguments to be governed by independently established argument structure, by the compatibility of a verb with certain constructions, or by any parameters of pro-drop. One would also predict a prevalence of one-participant clauses, especially in conversation, and an especially high degree of variation for the most frequent verbs.

In summary, the quantitative study sets out to empirically test the analysis presented in chapters 3-7 against other possible analyses and cross-linguistically observed factors that can condition a misalignment between lexical argument structure and the discourse realization of arguments. The study also aims at testing whether analyses that reject lexical argument structure generally or on language-specific grounds correspond to the facts of Jalonke. In view of the manifold and sometimes conflicting opinions present for well-studied languages like English, but also for the much less studied CM languages, it is hoped that such a quantitative test for analyses based on qualitative research, mostly absent from accounts of lesser described languages, can contribute to a solid empirical basis for further theoretical discussion.

9.3. THE SAMPLE

The discourse study is based on a sample of 7063 intonation units in total, featuring 30 different speakers. With the 79 intonation units uttered by me subtracted, the sample contains 6984 intonation units. These units were divided into clauses, that is, predication with either a verb or a predicate nominal or adposition as its head. Fragments not containing a predicate, false starts, incomprehensible turns, and utterances in French, Fula or Soso, or containing a main predicate in one of these three languages were excluded. The remaining cases add up to 5806 predication. The speakers, genres and texts of the sample were selected according to the following criteria. In order to reach a representative amount of data per speaker, and to be able to compare across speakers and genres, approximately 100 predication, verbal and nonverbal, were set as a goal per speaker, with minimally 20 speakers in as many genres as possible. Reaching this aim for 20 different speakers meant that for some speakers, the number of included predication had to be much higher, since many of the texts are interactive. Furthermore, some speakers participate in a great number of texts, while others feature only in one single text. Building a collection as representative as possible for 20 speakers from a field-based corpus also meant that the total number of speakers had to be higher than 20, since some speakers only appear with a few utterances in the sample but participate in the selected texts. A further attempt was made to represent different genres and/or texts from some speakers in the sample, so that consistency or deviations not only between speakers, but also within speakers across genres and texts could be assessed. At the same time, the sample was designed to contain the widest possible variation of genres, in order to be balanced with respect to differences in information structure, packaging, planning, etc., known to vary with genre (see Biber 1994a, 1994b, Himmelmann 1998, and the sources cited in the following section for an overview). Within genres, attention was paid to vary the topics of texts as much as possible with the intention of covering the widest possible range of real-world situations and events and hence verb types denoting these situations and events. The structure of the sample resulting from these considerations is given in Appendix 5, broken down by genres and texts in Table 1 and by speakers in Table 2.

9.3.1. GENRES INCLUDED

The identification of genres is known to be a problematic endeavor (Bakhtin 1986, Biber 1994a, 1994b, Ferguson 1994, Finegan & Biber 1994, Hymes 1972, 1974, *inter alia*). Not only can genres be established based on a combination of very different social and/or linguistic features, in different terminological traditions they can also contrast or overlap with other categories of discourse classification like register and style. In order to escape the dilemma of either placing discourse classification in the center of this thesis or using inadequate labels lacking a language-internal basis, I only distinguish genres in a very broad manner. Although I use pre-established labels to identify them, these labels reflect my own intuitions and the culture-specific perspective of Jalonke, except for clearly ‘borrowed’ genres. The preliminary inventory of genres, in my definition roughly equivalent to “speech events” in the sense of Hymes (1972: 56), that is, “activities or aspects of activities that are directly governed by rules or norms for the use of speech”, comprises the following:

Stories. These are a well-established genre in Jalonke. Both men and women engage in the activity of story telling. Stories are highly monologic in nature, but display a ritualized minimal interaction between the narrator and the listeners well known in Mande culture in general: A story starts with the following formulaic expressions, sometimes preceded by the exclamation *Taali!* ‘A story!’ or *Kiini-na* ‘The story!’ of the narrator:

Narrator:

- (1) *N* *ma* *sen!*
 1SG ? ?
 ‘Here’s a story!’⁵

⁵ It was so far impossible to determine the meaning of *ma sen*. *Sen* is most plausibly a noun, since it is probably referred to anaphorically in the following sentence by a third person singular pronoun. In this case, *ma* would be analyzed as the alienable possessive marker. *Masen* could also be a verb bearing the distributive derivational prefix *ma*. Since Jalonke speakers were unable to decompose the sentence or paraphrase its meaning other than by saying ‘This is how a story starts’, its exact sense remains obscure.

ARGUMENT REALIZATION IN DISCOURSE

Interlocutor(s):

- (2) *A xa jaxun*
3SG SUBJ be sweet
'May it be sweet!'

Narrator:

- (3) *Sube -dii A i.*
meat -DIM 3SG at
'There is a little meat in it.'

Interlocutor(s):

- (4) *Jaba -dii a i.*
Onion -DIM 3SG at
'There is a little onion in it.'

This exchange is optionally followed by more parallelisms citing additional 'ingredients' to the story. After these preliminaries, the narrator starts the story with the following sentence:

Narrator:

- (5) *Ndan a ra.*
Somebody 3SG with
'There is somebody.'

The narrator then sets on to introduce the main participant of the story. From there on, the only interactive features of the story are occasional questions of the narrator whether the interlocutors have understood, and, in regular intervals, the acknowledgement of the interlocutors that they have understood by uttering *naamu*. When the narrator reaches the end of the story, (s)he announces:

- (6) *Men- -na jɛn.*
There -DEF end
'That was it.'

CHAPTER 9

Stories are referred to by *kiini* or *taali*, ‘story’, and the activity of story telling is designated by *kiini madɔxɔ* ‘story DISTR-sit (down)’.

Historical narratives. Very similar to stories with respect to the degree of interactivity are historical narratives. They have a less formulaic beginning, but are very likely to start with the narrator giving his name and Islamic title. Historical narratives are almost exclusively produced by men. Men conserve the oral history and the genealogies. If women participate in this genre, they are old and of a very high social status, and they mostly relate issues like marriage customs in the traditional society, etc. As in stories, the participation of the audience is limited to *naamu* signaling understanding. What sets historical narratives apart from other narratives is that they contain long genealogical ‘lists’ clarifying the affiliation of the discourse proponents and/or their history of migration. Linguistically, these characteristics are reflected in the recursive use of existential and presentative nonverbal predications in the genealogical lists and/or in the preponderance of the motion verbs ‘come’, ‘go’, and ‘leave’ and of toponyms in texts in which migration is talked about. Historical narratives are designated by the Arabic loanword *taarik* and the French loanword *istɔar*, both meaning ‘history’.

Personal narratives. This genre shares the interactive pattern of historical narratives, but is much more diverse with respect to the topics addressed. For stereotypical personal experiences like marrying or the pilgrimage to Mecca, narrative ‘templates’ seem to exist that make these narratives almost interchangeable even if uttered by different people and interspersed with unique personal features.

Public speeches in Jalonke are practically absent in the present-day culture, because the language is confined to the private sphere. I came across only one speech in Jalonke that came about through my presence as the central addressee. Because of the triglossic language situation, on formal occasions either Fula speakers are present and determine the use of language, or the specific ‘modern’ context asks for French. Other planned genres like ritual and religious speech are likewise absent for similar reasons.

Conversation. In my use, this genre comprises chats and discussion. Conversation is the most heterogeneous genre. It can be contrasted with the genres introduced above because it is the most unplanned and interactive and the least cohesive genre with respect to topics. It is also the genre the most difficult to define, because of the absence of positive linguistic features determining it. This lack of features is

partially due to the heteroclitic character of conversation – it may be blended with short narratives, riddles, proverbs, stories, expositions, etc. Nevertheless it is a special genre for the Jalonke community called *summun* ‘chat’.

Plays. I included the only play of the corpus in the sample. Plays are likely to be a relatively new genre in Guinean culture that was introduced and spread by development aid institutions in order to popularize issues like health care, farming methods, and the like. A new generation of stand-up comedians like Jean Michel Kankan whose audio recordings are extremely popular have further contributed to its extension. It is not unusual to see mini-dramas performed at public gatherings, mostly addressing educational issues and employing drastic humor. While plays are an established genre in the majority languages and in French, a play written and performed in Jalonke was an initiative of the youth club I initiated in the village where I was based. It is the only genre in the corpus that is both completely planned and highly interactive. Its borrowed character is reflected in the French loanword *teatyr-na* ‘theater’ to designate it.

Letters. Another novel genre, at least in Jalonke, are letters. In the culture, there is a tradition of letter writing in Fula (employing a modified Arabic script) or in Arabic, gradually being joined by French. Since there is no written tradition for Jalonke, only the consultants I trained are able to write the language. Because one of them left the village to study and wrote me letters in Jalonke, I had the chance to include letters in the sample. It must remain unclear so far how much these letters are influenced by the existing tradition of letter writing in other languages. Letters are designated with the French borrowing *leter*.

Action descriptions. Finally, I included a genre created for linguistic purposes – that of action descriptions. Under action descriptions, I understand staged linguistic events (Himmelmann 1998) that are based on videos filmed in the village. These videos feature everyday activities, like women doing laundry or cooking a meal, men chopping wood or preparing to pray, etc. The linguistic descriptions resulting from these stimuli are different from all the other genres introduced so far, because they do not correspond to a speech event of the linguistic community. In that sense, they are highly artificial. They consist, however, of linguistically non-prompted utterances and thus differ greatly from elicited data. The reason to include action descriptions in the sample was based on practical considerations concerning the size and composition of the Jalonke corpus. Observed communicative events (Himmelmann 1998) or naturalistic texts are confined to the above mentioned gen-

res and very obviously impossible to vary in a controlled manner according to topics and real-world situations covered. The inclusion of action descriptions into the corpus and sample greatly increased the topics and the number of verb types present. The action descriptions oscillate between expository texts ('How to plant the garden') and sheer descriptions of the filmed situations.

Genres that are present in the corpus but excluded from the sample are proverbs and songs. I collected only around 30 proverbs and considered this number insufficient for a quantitative study. Songs were impossible to gloss and translate, because they contain archaisms, unrecognizable words and phrases and in general often do not consist of clauses. Other genres well known in the Mande culture (Bird 1971, Camara 1976, Conrad & Frank 1995), and mostly performed by a specialist caste, the "griots" or bards, are epics, hunter songs and songs of praise. These genres, reflecting oral history or citing genealogies, have died out in the Jalonke culture, since it has lost its griots.

9.3.2. CATEGORIES OF ANALYSIS

The clauses contained in the sample were coded for several variables. A first set of variables determines the identity of the speaker, the text, i.e. the unit of discourse the clause belongs to, and the genre of that unit of discourse. The predication type was coded, distinguishing between verbal and nonverbal predications, and among nonverbal predications between class inclusion, equation, location, existence, possession and presentation. For verbal clauses, the lexical argument structure of the head was indicated as either intransitive, reflexive-only, transitive or causative-inchoative alternating.⁶ It was then coded for the number of realized arguments in the clause, which were either zero, one, or two.⁷ Where there was a mismatch between the lexical argument structure of a verbal head and the number of arguments it appeared with, the alternation type was identified, where possible, in terms of the

⁶ *In contrast to the other argument structure classes, for causative/inchoative alternating verbs, it was not possible to state their lexical argument structure as either transitive (for the causative alternant) or intransitive (for the inchoative alternant) and analyze a deviating syntactic realization in terms of the alternation. This impossibility is due to the systematic ambiguity of these verbs in intransitive clauses, where they can either be interpreted as the passive of the causative alternant or as the inchoative alternant. The ambiguity can only be resolved through knowledge of the real-world situation depicted, which is generally not feasible in texts.*

⁷ *In the quantitative study, just as in defining the three large argument structure classes, only direct arguments were taken into account, thus excluding participants expressed in postpositional phrases.*

passive, the imperative,⁸ the applicative or the unexpressed object alternation. The main verb of the clause was specified, and when it was derived, the derivation type – causative, distributive, or iterative – was given and the lexical argument structure of the base verb was stated. Finally – not crucial to the study but to the more general issue of noun-verb distinction in the language – the occurrences of zero-derived deverbal nouns were coded, their function was classified as either subject, object or action nominalization, and the base lexeme was stated. The results of the part of the study relating to noun-verb distinction are not reported here, but have been laid out in 2.4.1 and Appendix 3.

9.4. THE STRUCTURE OF THE OVERALL SAMPLE

9.4.1. THE DISTRIBUTION OF VERBAL PREDICATIONS OVER ARGUMENT STRUCTURE CLASSES

Of the 5806 clauses in the sample, 5084 or 87.6% contain verbal predicates, and 722, corresponding to 12.4%, are verbless predications. Table 1 shows how the clauses headed by verbal predicates are distributed over the argument structure classes established on the basis of morphosyntactic criteria (see chapters 3-7). The 5084 verbal predications in the overall sample are composed of 36.4% intransitive verb tokens, of 1.7% reflexive-only verb tokens, of 50.6% transitive verb tokens and of 11.3% tokens of causative/inchoative alternating verbs. Thus, the distribution of argument structure classes over verb tokens roughly mirrors the distribution of argument structure classes over verb types in the Jalonke lexicon established in chapter 6. According to Nichols (1993: 74), who regards the number of 41% transitive verbs in the Russian lexicon as extremely high, the high number of transitive verb types in the lexicon and of transitive verb tokens in the Jalonke sample would make Jalonke an extremely transitive language.

⁸ *Although there is the logical possibility of the imperative co-occurring with other alternations, this combination in fact never arose in the sample, so for practical reasons the imperative is treated on a par with the other alternations.*

Table 1: Distribution of verb tokens and types in the overall sample and of verb types in the Jalonke lexicon over argument structure classes

Argument structure class	Sample (verb tokens)		Sample (verb types)		Lexicon (verb types)	
	Absolute	%	Absolute	%	Absolute	%
Causative/inchoative	573	11.3	17	6.2	23	5.5
Transitive	2574	50.6	150	54.3	223	52.8
Reflexive-only	88	1.7	16	5.8	24	5.7
Intransitive	1849	36.4	93	33.7	152	36
N	5084	100	276	100	422	100

9.4.2. THE DISTRIBUTION OF VERBAL PREDICATIONS OVER VALENCE CLASSES

Table 2 illustrates how often the verbal clauses in the sample appear with zero, one, or two arguments respectively. 0.5% of all verb tokens appear without an argument. 49.7% feature one argument, and 49.8% feature two arguments. This distribution is contrasted with the argument structure classes of the verb tokens in Table 1, repeated in Table 2. A first appraisal of the patterns reveals a high degree of overlap, but also mismatches between valence and lexical argument structure. The number of verb tokens featuring two arguments, 2532, is slightly lower than the number of transitive verb tokens, which is 2574. Even if we add the number of reflexive verbs, with two syntactic arguments, to be weighted together with the transitive tokens against the tokens with two arguments, we find a slight misalignment. 2532 two-argument clauses are present, against 2662 reflexive and transitive verb tokens. The number of verb tokens featuring one argument, 2527 is considerably higher than the number of intransitive verb tokens, which amounts to 1849. Causative/inchoative alternating verbs are an argument structure class that can not directly map onto a valence class – these verbs can appear with either one or two arguments. If we admit for the time being that these verb tokens are evenly split between the two possible valence classes, we are nearer to closing the gap between valence and lexical argument structure of the verb tokens in the sample. Finally, there is one valence class to consider that is not equivalent to a argument structure class – the verb tokens appearing without an argument. On the account presented so far, these verb tokens should exclusively be composed of intransitive tokens in the imperative. All other mismatches should equally be explainable in alternations, and valence-decreasing alternations – passive and unexpressed object alternation – should be prevalent, while valence-increasing alternations – the applicative alternation – should be marginal in order to account for the distributional patterns. The

ARGUMENT REALIZATION IN DISCOURSE

next section looks closer at alternations and investigates to what degree they are responsible for lowered or raised valence.

Table 2: Distribution of verbal predications over valence and argument structure classes in the overall sample

Valence classes	Sample (verb tokens)		Argument structure classes	Sample (verb tokens)	
	Absolute	%		Absolute	%
Two arguments	2532	49.8	Causative/inchoative	573	11.3
One argument	2527	49.7	Transitive	2574	50.6
No argument	25	0.5	Reflexive-only	88	1.7
			Intransitive	1849	36.4
N	5084	100		5084	100

9.4.3. THE DISTRIBUTION OF ALTERNATING AND NON-ALTERNATING TOKENS

When contrasting lexical argument structure and syntactic valence of the tokens in the sample, a first glance shows that they seem to be closely aligned, albeit not identical. The number of verb tokens that appear with two arguments is slightly lower than the number of transitive verb tokens, and so forth. A look at the distribution of non-alternating verb tokens (i.e. verb tokens, for which lexical argument structure and valence match) and alternating verb tokens, split up according to the recognized alternations of Jalonke in Table 3 allows a first evaluation of the factors conditioning observed deviations from lexical argument structure. In 92.2% of cases, no alternation occurs, that is, lexical argument structure tallies with syntactic realization of arguments. The remaining cases can be identified as instances of alternations: in 5.1% of cases as the passive alternation, in 0.8% as the unexpressed object alternation, in 1.7% as the imperative, and in 0.2% as the applicative alternation. The distinction made in chapter 8 with respect to the nature of alternations as morphosyntactic or morpholexical is confirmed. The passive (and the imperative, although not treated as a morphosyntactic operation, because normally not considered a valence-changing process) involves a wide range of verb types, i.e. lexemes. As expected given its compatibility with all transitive verbs, 81 verb types out of the 276 verb types featuring in the sample occur in the passive. 38

CHAPTER 9

verb types occur in the imperative, cross-linguistically known to be eligible for verbs other than stative ones. In contrast, only 4 verb types (out of the 5 verbs participating in that morpholexical operation in the lexicon) in the sample occur in the unexpressed object alternation, and only one verb type, the verb *wale* ‘work’ occurs in the applicative alternation in the sample. In the lexicon, two verb types are attested in the applicative alternation. 17 of the 23 verb types analyzed as causative/inchoative alternating in the lexicon appear in the sample.

In addition, no other deviations from lexical argument structure than explainable in terms of alternations is attested. Neither do transitive verbs other than the 5 ones identified in chapter 7 occur in the unexpressed object alternation, nor do intransitive verbs with the exception of *wale* ‘work’ participate in the applicative alternation in the sample. Moreover, subject-drop – the imperative notwithstanding – and object-drop are not attested in contexts other than the alternations identified. That indeed alternations, and not, for instance object-drop is responsible for cases in which arguments are not realized, can be assessed through the context.

By far the most important finding to focus on for the moment, however, is the startling distribution of non-alternating and alternating verb tokens. The lion’s share of tokens – 92.2% – appear with the number of arguments predicted by their argument structure, and causative/inchoative alternating verbs are distributed more or less evenly over the two valence classes for which they are eligible. Thus, alternations, with the exception of the causative/inchoative alternation, are confirmed as insignificant. Even an account not based on argument structure and alternations from it would have to recognize the overall marginality of deviating cases. The following section zooms in closer on argument structure classes and alternation types per valence class and scrutinizes whether the alternations present in the sample respect the logical possibilities for alternations dictated by the language.

Table 3: Distribution of alternations in the overall sample

Alternation	Sample (verb tokens)	
	Absolute	%
No alternation	4630	92.2
Applicative alternation	11	0.2
Imperative	98	1.7
Unexpressed O alternation	49	0.8
Passive	296	5.1
N	5084	100

9.4.4. THE DISTRIBUTION OF ARGUMENT STRUCTURE CLASSES OVER VALENCE CLASSES

There are different logical possibilities for the deviation from lexical argument structure in an account based on alternations. Given the fact that the imperative does not co-occur with any of the alternations in the sample, transitive and reflexive-only verbs should appear with minimally one argument (in the passive, the unexpressed object alternation or the imperative). Transitive verbs should not, however, occur with zero arguments. Intransitive verbs – with the exception of the one verb type, *wale* ‘work’ that appears in the applicative alternation in the sample – should occur with either one or zero arguments, but not with two arguments. Causative-inchoative verbs are the only group that logically could be attested with zero, one or two arguments. The distribution of argument structure classes over valence classes as given in Table 4 confirms these predicted patterns. The class of verbs that appear without an argument is composed to 100% of intransitive verb tokens. The overwhelming majority, 71.3%, of clauses in which one argument is realized, contains intransitive verbs. In 0.3% of cases, these clauses are headed by reflexive-only tokens, in 12.9% by causative/inchoative alternating tokens, and in 15.6% by transitive tokens. Clauses in which a verb realizes two arguments are made up of 86.1% transitive verb tokens, 9.8% causative/inchoative alternating tokens, 3.2% reflexive-only tokens, and only 0.9%, the cases of *wale* ‘work’, of intransitive tokens. Thus, the picture and hypotheses resulting from the bird’s eye view in 9.4.3 is confirmed on a closer look: all verbs show an alignment between lexical argument structure and argument realization in the bulk of occurrences. If they don’t, the verbs behave in predictable ways, in most cases appearing with one argument less than lexically specified, in only very few cases concerning one verb type with one argument more than specified. It remains to be seen whether the relation between valence and lexical argument structure is completely transparent

CHAPTER 9

when taking alternations into account. This relation is investigated in the following section.

Table 4: Distribution of lexical argument structure types over valence classes in the overall sample (verb tokens, n = 5084)

Argument structure class	Valence class					
	No argument		One argument		Two arguments	
	Absolute	%	Absolute	%	Absolute	%
Causative/inchoative	0	0	325	12.9	248	9.8
Transitive	0	0	393	15.6	2181	86.1
Reflexive-only	0	0	7	0.3	81	3.2
Intransitive	25	100	1802	71.3	22	0.9

9.4.5. THE DISTRIBUTION OF NON-ALTERNATING AND ALTERNATING TOKENS OVER ARGUMENT STRUCTURE CLASSES

Let us complete the picture by looking at the percentage of non-alternating tokens, that is tokens that appear with the number of arguments predicted by their lexical argument structure, and at the cases which we can explain through alternations per argument structure class. The outcome of this examination is the following, as shown in Table 5.

ARGUMENT REALIZATION IN DISCOURSE

Table 5: Distribution of alternations per argument structure classes in the overall sample (verb tokens, n = 5084)⁹

Alternation	Argument structure class							
	Intransitive		Reflexive-only		Transitive		Causative/inchoative	
	Absolute	%	Absolute	%	Absolute	%	Absolute	%
No alternation	1813	98.1	83	94.3	2184	84.8	550	96
Applicative alternation	11	0.6						
Imperative	25	1.4	5	5.7	63	2.4	5	0.9
Unexpressed O alternation					49	1.9		
Passive					278	10.8	18	3.1

98.1% of intransitive verb tokens do not alternate, i.e they appear with one argument. 1.4% or all the imperative alternations of theses verbs appear without an argument. 0.6%, the cases of the applicative alternation, occur with two arguments.

Reflexive-only verb tokens realize their two lexically specified syntactic arguments in 94.3% of cases. If they alternate, in 5.7% of cases, this is exclusively due to the imperative.

Transitive verb tokens appear with two arguments in 84.8% of clauses in the sample. The verbs can take only one argument less than specified by their lexical argument structure, due in 10.8% of cases to the passive alternation, in 1.9% of cases to the unexpressed object alternation, and in 2.4% of cases to the imperative alternation.¹⁰

For causative/inchoative alternating verb tokens, the situation looks slightly different: in 96% of cases, no alternation could be specified. In 0.9% of occurrences, the imperative alternation of the causative alternant was present and in 3.1%, a passive alternation of the causative alternant could be identified. The 96% of causative/inchoative alternating tokens without a specifiable alternation have two syntactic arguments in 43.3% of cases. Only these cases can be clearly recognized as

⁹ For combinations that are logically impossible, like the unexpressed object alternation for an intransitive verb, or not licensed by the language, like passives of intransitive verbs, the corresponding cells are left blank.

¹⁰ Percentages that do not add up to exactly 100 are due to rounding.

CHAPTER 9

non-alternating, namely as instances of non-alternating causative alternants of this verb class. The 56.7% of causative/inchoative tokens that appear with only one syntactic argument cannot be classified as passives of the causative variant or as inchoative variants in the majority of cases. This ambiguity is due to the absence of a clarifying real-world context in texts. Thus, only in the specific context of causative/inchoative verbs, where it is to be expected on language-internal grounds, a lexical argument structure cannot be attributed for all occurrences. It is reminded here that these cases concern 17 verb types in the sample.

9.4.6. THE 20 MOST FREQUENT VERBS IN THE SAMPLE AND THEIR PROPERTIES

As a preliminary to the inspection of individual genres, Table 6 gives an overview of the 20 most frequent verb types in the overall sample. These 20 types and their tokens account for 4241 of all verb tokens, that is, for 83.4% of all verbal predication. Although the three most frequent verbs, ‘go’, ‘come’, and ‘say’ are all intransitive, only 6 intransitive verb types are represented among the 20 most frequent verbs, 9 of them being transitive and 4 causative/inchoative alternating.

Table 6: The 20 most frequent verbs in the overall sample with their lexical argument structure, their mean valence and token frequency

Lexeme	Gloss	Argument structure class	Mean valence	Token frequency
<i>sigə</i>	‘go’	itr.	0.99	346
<i>faa</i>	‘come’	itr.	0.97	334
<i>naxa</i>	‘say’	itr.	1.00	276
<i>lii</i>	‘find’	tr.	1.64	187
<i>saa</i>	‘lie (down)’	caus/inch.	1.64	138
<i>kolon</i>	‘know’	tr.	1.99	137
<i>rabaa</i>	‘do, make’	tr.	1.72	123
<i>tongo</i>	‘take’	tr.	1.79	112
<i>keli</i>	‘get up, leave’	itr.	0.95	103
<i>too</i>	‘see’	tr.	1.97	98
<i>fala</i>	‘speak’	tr.	1.94	96
<i>luu</i>	‘stay, remain, cease, stop’	caus/inch.	1.45	94
<i>don</i>	‘eat’	tr.	1.96	78
<i>man</i>	‘be able, capable’	itr.	1.00	73
<i>dɔxɔ</i>	‘sit (down)’	caus/inch.	1.41	73
<i>xani</i>	‘send’	tr.	1.96	69

ARGUMENT REALIZATION IN DISCOURSE

Lexeme	Gloss	Argument structure class	Mean valence	Token frequency
<i>soo</i>	‘enter’	caus/inch.	1.25	64
<i>mεε</i>	‘hear’	tr.	2.00	61
<i>mini</i>	‘exit’	itr.	1.03	59
<i>lan</i>	‘meet, agree’	itr.	1.00	56

The mean valence for most of the verbs (causative/inchoative alternating verbs disregarded for the moment) is close to or identical with that predicted by their lexical argument structure. One intransitive verb, *mini* ‘exit’, not participating in the applicative or causative/inchoative alternation appears unexpectedly with a mean valence higher than 1 – the verb appears in a transitive clause once in the sample. On a closer investigation, most consultants found the transitive use of *mini* ‘exit’ unacceptable, preferring the morphologically causativized form. Consequently, the transitive use of *mini* by one speaker has to be judged either as a performance error or as a change in progress. Such a change would not be improbable, given that the antonym of *mini* ‘exit’, *soo* ‘enter’ participates in the causative/inchoative alternation.

Causative inchoative verbs are an argument structure class that is defined in terms of the alternation in which the verbs participate. Therefore, in the sample, these verbs were not assigned an argument structure based on the causative or the inchoative alternant, because only their transitive causative uses can be unambiguously identified as such. Since their intransitive uses oscillate between an intransitive inchoative and a transitive passive reading, the whole class was treated apart in terms of the alternation in which it occurs rather than in terms of two argument structure configurations. Not surprisingly given the two syntactic options for these verbs, their mean valence occupies the middle ground between 1 and 2 arguments.

There are some other exceptions to the overall close alignment between mean valence and lexical argument structure, all of them concerning transitive verbs. Therefore, the following paragraph investigates additionally the 20 most frequent **transitive** verbs, scrutinizing especially those that have a mean valence considerably lower than expected from their lexical argument structure and searching for an explanation for this divergence. Since the passive is by far the most frequent cause for a decrease in valence for these verbs, the distribution of active and passive tokens for these verbs is considered.

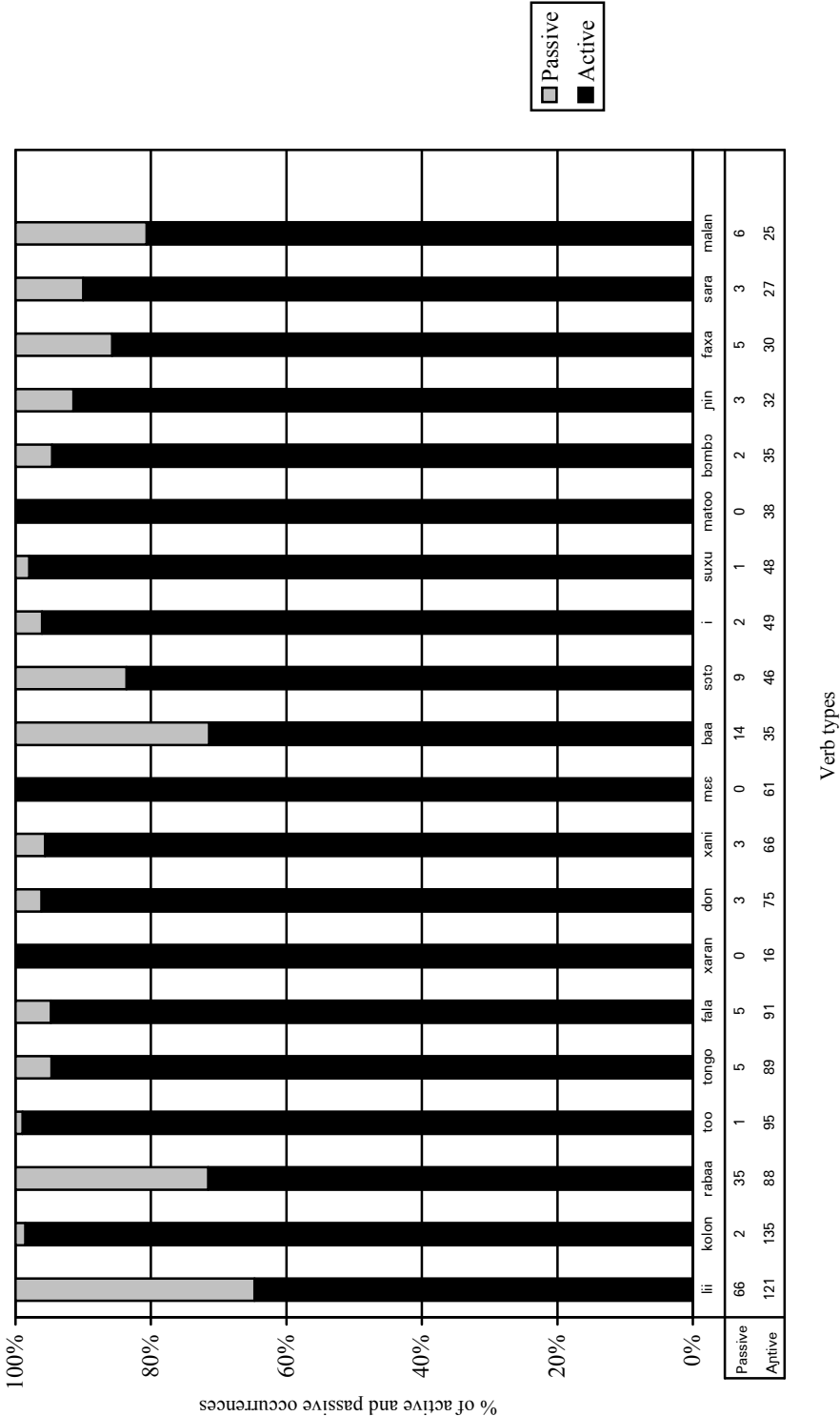
CHAPTER 9

Table 7 : The 20 most frequent transitive verbs in the overall sample with their mean valence and token frequency

Lexeme	Gloss	Mean valence	Token frequency
<i>lii</i>	‘find’	1.64	187
<i>kolon</i>	‘know’	1.99	137
<i>rabaa</i>	‘do, make’	1.72	123
<i>tongo</i>	‘take’	1.79	112
<i>too</i>	‘see’	1.97	98
<i>fala</i>	‘speak’	1.94	96
<i>don</i>	‘eat’	1.96	78
<i>xani</i>	‘send’	1.96	69
<i>mεε</i>	‘hear’	2.00	61
<i>sɔtɔ</i>	‘find’	1.84	55
<i>baa</i>	‘extract, draw (water)’	1.69	51
<i>i</i>	‘say’	1.96	51
<i>suxu</i>	‘grasp, seize’	1.98	49
<i>matoo</i>	‘watch’	1.86	44
<i>bɔmbɔ</i>	‘hit’	1.92	37
<i>jin</i>	‘cook’	1.91	35
<i>faxa</i>	‘kill’	1.86	35
<i>sara</i>	‘buy’	1.84	32
<i>xaran</i>	‘read, learn, study’	1.50	32
<i>malan</i>	‘assemble’	1.81	31

Since the passive accounts for the largest proportion of alternations for transitive verbs, Figure 1, illustrates the ratios of active and passive tokens for the 20 most frequent transitive verb types, disregarding the imperative and the unexpressed object alternation. The columns reflect the percentages of passives in ascending order from left to right.

Figure 1: Distribution of active and passive tokens per verb type for the 20 most frequent transitive verb types



CHAPTER 9

We find that 4 of the verb types are only present in the active voice. The remaining 16 verb types occur much more often in the active than in the passive voice. For most verb types, the percentage of active token is situated around 90%; only three verb types, *lii* ‘find’, *rabaa* ‘do, make’, and *baa* ‘extract, draw (water)’ feature the passive in roughly 30% of all occurrences. For *lii* ‘find’, this high proportion of passives is due to the fact that it often appears with sentential complements giving an information without revealing the source of the information or committing one-self to it. *Lii* ‘find’ also occurs often passively in the subjunctive in order to make a threat stronger by presenting it in an impersonal way, as in example (7).

- (7) *Xa a lii o don -na jin -ma nde,*
 SUBJ 3SG find 2PL food -DEF cook -IPF INACT
 ‘Should it turn out (lit.: be found) that you are going to cook food

o m’ an kii...
 2PL NEG 1SG present
 (and) you don’t offer me some...’

Nga 029

Rabaa ‘do, make’ is also often used in the passive in order to report that something was done without referring explicitly to the agent. Additionally, the verb often appears in subordinate clauses to establish the temporal order of two events, as in (8).

- (8) *Na ra baa -xi na, teret -εε tii.*
 DEM:DIST do -PF when noise -DEF stand
 ‘When this was done, the noise rose.’

Alpha 065

Baa, ‘extract, draw (water)’ is used in a number of collocations like *xaalisi-na baa* ‘pay money’, *sarax-aa baa* ‘perform a sacrifice’, *dub-aa baa* ‘say a benediction’, apart from the more literal cases of extraction and removal like *jee-na baa* ‘draw water’ or *nɔx-εε baa* ‘remove dirt, clean’. As for *rabaa*, in the passive the verb mainly appears in subordinate clauses that temporally frame the event of the main clause.

Interestingly, *xaran*, ‘read, learn, study’, one of the verbs participating in the unexpressed object alternation, does not occur at all in the passive in the sample, but only in the unexpressed object alternation.

What thus becomes evident from a close look at the most frequent transitive verbs is that some individual verbs are more geared towards a larger proportion of passives than others. Even for these verbs, though, the percentage of actives is always considerably higher than the percentage of passives, as graphically illustrated in Figure 1.

9.4.7. DISCUSSION OF THE FINDINGS FOR THE OVERALL SAMPLE

It is now time to look back at the motivations for the study and the specific predictions related to them in 9.2 and to assess these against the findings presented in 9.4.1-9.4.5 above.

With respect to the first issue, the verification of the language-internal analysis of Jalonke argument structure classes, the following has become evident. In the Jalonke overall sample, 92.2% of all verb tokens do not alternate, that is, they appear in their basic argument structure configuration, if one takes the two possible syntactic options for the minority of causative/inchoative alternating verbs as characteristic for the class (which is the only option given the ambiguity of the intransitive alternants of that class). We are therefore on safe ground in stating that lexical argument structure as defined through morphosyntactic criteria is a good predictor for the number of arguments realized by a given verb in discourse. That in itself is an important finding. In addition, even with respect to the mismatches between argument structure and argument realization, we are in the position to explain all of them through alternations licensed by the language. The largest percentage of alternations is present for transitive verbs, because they can undergo the largest number of alternations – imperative, unexpressed object alternation and passive. Nevertheless, even transitive verb tokens realize two arguments in 84.8% of cases. Moreover, the passive that is responsible to the greatest part for a deviation from lexical argument structure does not only occur very infrequently if we look at verb **tokens** (in 10.8% of cases), it is also far from occurring with all transitive verb **types** in the sample. The passive occurs with only 81 of the 150 verb types in the sample, that is, with 54% of the eligible transitive verb types. Around 90% of all the instances of a given verb type in the sample are non-alternating. The distribution of non-alternating and alternating verb tokens and types is even more asymmetrical with respect to the other, marginal, alternations, the causative/inchoative alternation exempted. Thus, the argument structure classes established in chapters 3-6, and the nature of alternations laid out in chapter 7 are fully confirmed.

CHAPTER 9

Adopting a broader perspective and turning to alternative accounts for Jalonke, which have indeed been proposed for closely related Mande languages with very similar morphosyntactic properties for verb, we can state the following. An account based on ‘lability’ of verbs, which leads Creissels (1983a) and Tröbs (1998) to refute lexical argument structure or to base it on the minimal syntactic valence of transitive verbs, does no justice to the facts of Jalonke. Such an account would be appropriate if the number of arguments realized by a given verb would be unpredictable, and if no discernable parameters governing syntactic valence were present. We have seen that this is blatantly not the case for Jalonke. It remains to be seen whether other Mande languages on a closer look lend themselves to an account similar to the one proposed in this thesis.

Turning now to the second, related issue, that of the availability of argument ellipsis, having important consequences on the admission of a lexical argument structure for verbs in ‘cool’ languages (Huang 1984), the outcome of the study is the following. It can be concluded that Jalonke is a ‘hot’ language. Jalonke does not allow argument ellipsis in finite clauses. Whenever an argument of a given verb is not realized in discourse or when, as attested for one verb type, an argument is added, one of the recognized alternations of the language accounts for the ‘mismatch’. In this respect, Jalonke is very similar to English, at least for approaches to English that acknowledge a lexical argument structure and alternations from it (Levin 1993, ‘projectionist’ approaches to argument structure in general). What distinguishes Jalonke from English, then, is not so much its position on Huang’s typology, but the number and, possibly, frequency of alternations. English exhibits a great number of alternations, whereas in Jalonke, they are limited to five, of which only the passive and the imperative are productive. The causative/inchoative alternation is limited to 23 verbs in the lexicon and occurs only with 17 verb types in the sample. The remaining two alternations, the applicative and the unexpressed object alternation, are very marginal and clearly lexicalized, concerning 2 and 5 verb types respectively in the lexicon. Especially with respect to the unexpressed object alternations, Jalonke and English contrast deeply, since it is one of the most widespread alternations of English, but an alternation blocked for the majority of transitive verbs in Jalonke. In conclusion, we can rule out argument ellipsis as present in Jalonke, even though it is assumed by Creissels and Tröbs to be present in other Mande languages.

The third issue motivating the study is related to assumptions regarding the level of information structure – lexical vs. constructional – at which the number of a verb’s

arguments is specified. In the preceding paragraph, it was mentioned that an account analyzing English in terms of lexical argument structure and alternations, or a projectionist account, is not uncontroversial, given the number and range of alternations. For Jalonke, we can now conclude that the variation in valence is very limited, lending itself well to a projectionist account. More importantly, the syntactic range for Jalonke verbs, at least when only direct arguments are taken into account, is considerably narrower than in English, the language most studied in relation to both constructionalist and projectionist approaches to argument structure. A number of alternations – the unexpressed object alternation and the applicative alternation are clearly defined on a verb-by-verb basis, as morpholexical operations. To summarize, the mapping from postulated argument structure to syntax is so straightforward in Jalonke that the assumption of lexical argument structure as the level at which the information about the number of arguments is stored receives confirmation.

It is obvious by now that the most radical approach to argument structure, the one denying it altogether, is not supported by the findings for Jalonke. Since this approach, however, was one of the motivations to conduct the quantitative study, let us finish by contrasting Thompson & Hopper's (2001) findings with the results of the Jalonke study. In the Jalonke overall sample, transitive verb tokens (50.6%) were considerably more numerous than intransitive verb tokens (36.4%). This contrasts with the English findings of a ratio of 73% of one-participant clauses against 27% of two-participant clauses. Although Thompson & Hopper's findings concern conversation (looked at in detail for Jalonke in 9.5.4.5 below) as the only genre and include non-verbal predications into the one-participant clauses (examined according to Thompson & Hopper's partitioning in 9.5.1 below), the following is already noteworthy. On the whole, the distribution of transitive and intransitive verb tokens is inverse to the one predicted by Thompson & Hopper. More crucially, there is absolutely no evidence for the fragmentary nature of discourse as claimed by them. Even the most frequent verbs, predicted by Thompson & Hopper to be likely to have no fixed argument structure at all, do not behave in a way similar to the English findings.

9.5. VARIATION ACROSS GENRES

The preceding sections have demonstrated that given the relatively low proportion of alternations, the distribution of valence patterns is to a large degree determined by the number of verbs of a given argument structure class. To a lesser degree, this distribution is determined by the number of alternations that these verbs present in

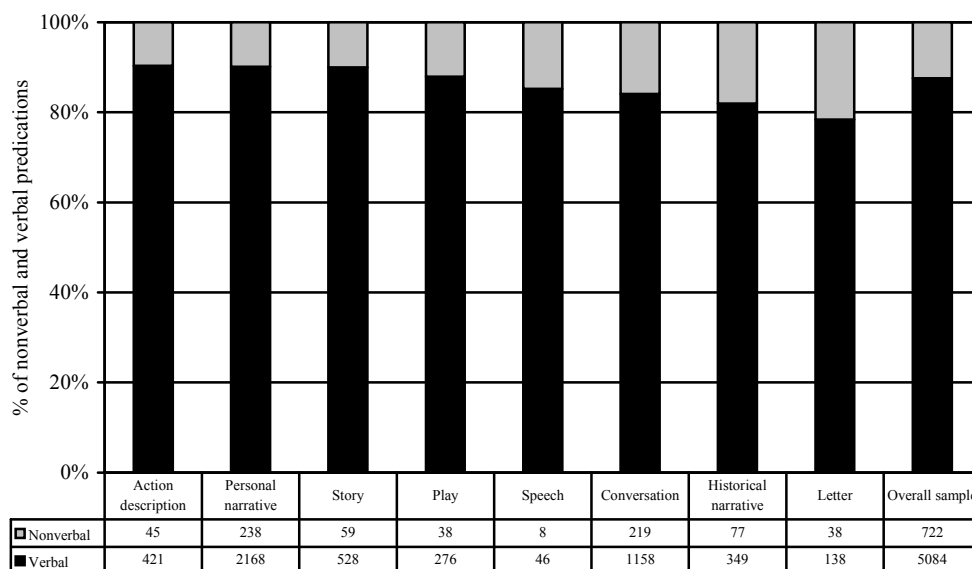
discourse. It is to be expected that genres differ in the distribution of verbal and non-verbal predications and in the frequency of occurrence of verb tokens of the different argument structure classes, due to their different discourse functions and to a different density of information packaging across genres. To complement the exploration of the overall sample, this section examines the properties of the different genres more closely.

9.5.1. DISTRIBUTION OF VERBAL AND NON-VERBAL PREDICATIONS AND ONE-PARTICIPANT AND TWO-PARTICIPANT CLAUSES OVER GENRES

Genres are situated on a cline when it comes to the distribution of verbal and non-verbal predications. We find the least proportion of non-verbal predications (9.7%) in action descriptions, followed by personal narratives with 9.9%. Stories contain 10.1%, the play 12.1%, and the speech 14.8% of nonverbal predications. In conversation, this percentage is 15.9%, in historical narratives 18.1%, and in letters 21.6%. This distribution can be explained through the main functions of nonverbal predications: they serve to introduce new discourse referents, to localize referents and attribute properties or possessions to a discourse referent. Moreover, greetings contain a considerable number of nonverbal predications. Not surprisingly, then, the genres that introduce discourse referents mainly at the beginning and hold on to them through the text and that generally do not contain greetings – action descriptions, personal narratives, and stories – score very low for nonverbal predications. The speech investigated involved the presentation of a new health post to the public, hence contains a large proportion of presentatives. In conversation, new discourse referents can be introduced at any moment, and since all the conversations in the sample take place in the courtyard, people passed by and were greeted on a regular basis. Most historical narratives include extensive lineages whose members are introduced through non-verbal predications. And letters comprise a large amount of greetings at the beginning and the end. Figure 2 illustrates this cline.

ARGUMENT REALIZATION IN DISCOURSE

Figure 2: Distribution of nonverbal and verbal predications per genre and in overall sample

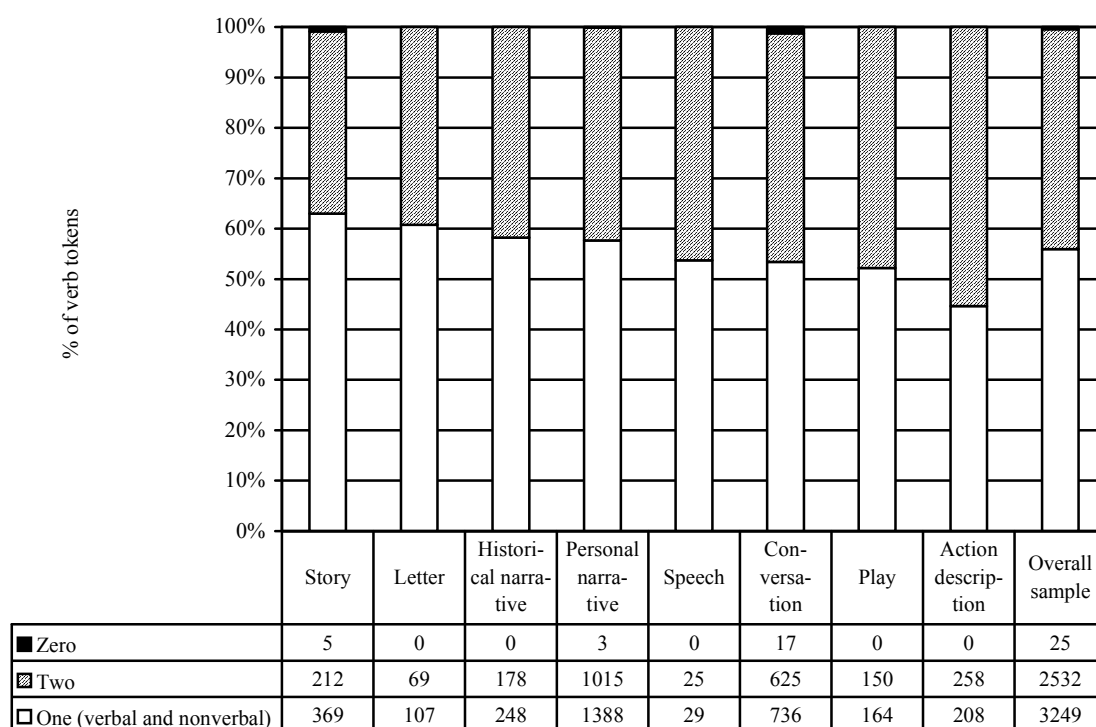


n = 5806

Thompson & Hopper (2001) not only look at verbal clauses in their study, but also include non-verbal predications counted as one-participant clauses. This partitioning leads to their reported rate of 73% of one-participant clauses and 27% of two-participant clauses for conversation. For Jalonke, it was already shown in Table 2 above that within verbal predications in the overall sample, the ratio between clauses with one argument and two arguments is roughly 1:1. Even if one adopts Thompson & Hopper's model of grouping and clusters non-verbal predications and clauses with one syntactically expressed argument together, as shown in Figure 3, Jalonke is far from reaching the ratio of English. In the overall sample, 56% of verbal and non-verbal clauses together have one participant, and 44% of clauses, all of them verbal, have two participants. Broken down by genres, the highest ratio of one-participant clauses is present in stories, with 62.8%, followed by letters with 60.8%. Further down the cline are historical narratives, with 58.2% and personal narratives with 57.7% of one-participant clauses. The speech contains 53.7% of one-participant clauses, and only then follows conversation with 53.4%. The play and action descriptions are at the lowest end of the cline, with 47.8 and 44.6% of clauses with only one participant respectively. Most remarkably, the number of clauses with two participants is never lower than 36.1% (in stories), and conversation with 46.6% is far from being the genre with the smallest number of two-participant clauses.

CHAPTER 9

Figure 3: Distribution of clauses with zero, one (comprising non-verbal and verbal predications) and two arguments across genres and in overall sample

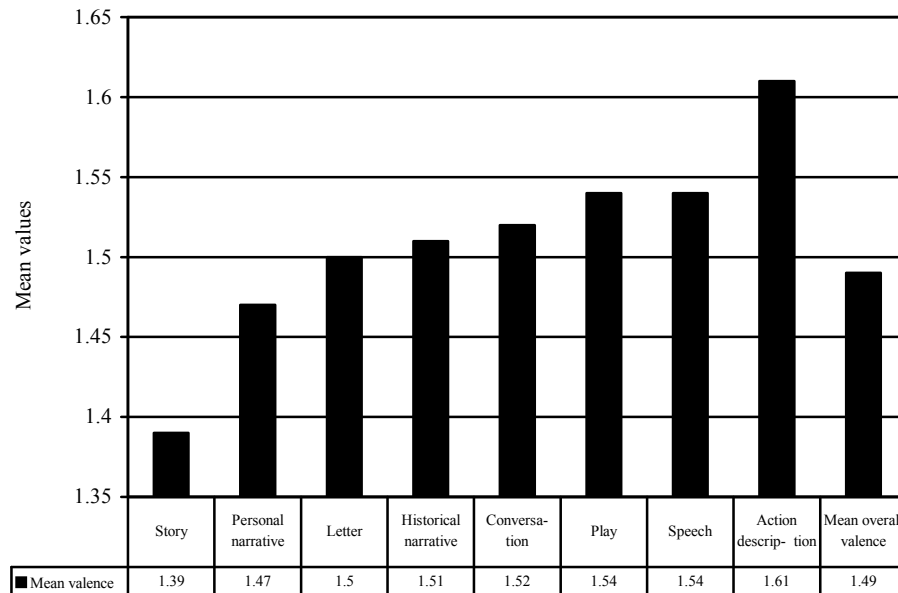


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9.5.2. DISTRIBUTION OF VALENCE PATTERNS OVER GENRES

The different proportions of verbal and nonverbal predications were alluded to in the preceding section. What remains now is to elucidate to what degree verb tokens of a given argument structure class and alternations determine the valence patterns of a genre, and to explore the most frequent verb types whose tokens shape discourse to an important degree. Starting out with mean valence patterns across genres in this section, Figure 4 gives an overview of the mean verbal valence per genre.

Figure 4: Mean valence across genres and in overall sample

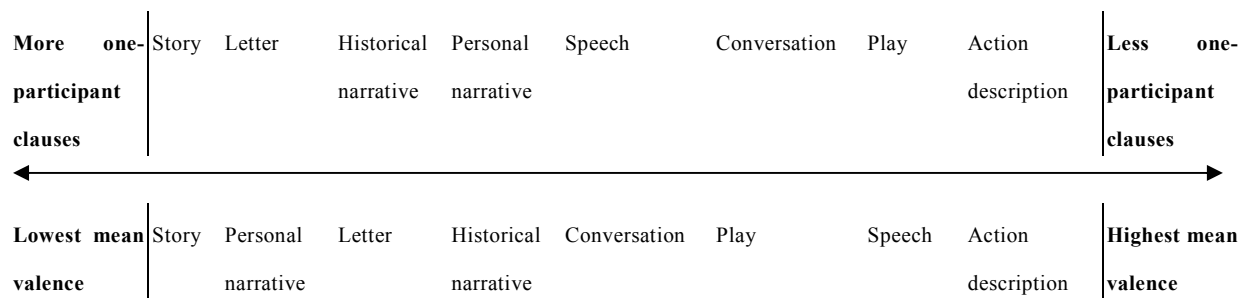


What seems noteworthy, although its statistical significance cannot be tested here, are the two large steps creating three large groups: the genre story exhibits a considerably lower mean verbal valence than the genres following it on the cline. The next five genres, personal narratives, letters, historical narratives, conversation, the play and the speech cluster together in gradually increasing means for valence without any drastic steps. Between the speech and the genre of action description, again, the rather smooth cline is interrupted by a step. This means that stories, in addition to containing the greatest number of non-verbal predications, score exceptionally low with respect to the number of transitive and reflexive-only verbs or exhibit a rather large degree of alternations. Action descriptions, on the other hand, reveal their transitive character drastically, again both with respect to the number of non-verbal predications and to the large number of transitive and reflexive-only verbs or a very small number of alternations.

When comparing the distributions of clauses with one and two participants, regardless of the predication type, over genres with the mean verbal valence values per genre, we find a similar, although not identical, cline in both cases. This cline is illustrated in Figure 5. Stories and action description occupy the two end poles of the cline. For the other genres, the number of one-participant clauses and the mean verbal valence are not aligned. This misalignment is owed to the partially overlap-

ping functions of non-verbal and intransitive verbal predications. Although there are functions that are exclusively covered by nonverbal predications in the language, such as predicative possession, other functions like location and attribution of a property can be fulfilled by both nonverbal and verbal predications. For instance, locative predications can, but do not have to, contain a posture verb, and nonverbal equational and presentative predications attribute properties to a referent just like stative verbs do. This means that the discourse functions covered by non-verbal and verbal predications are not necessarily disjoint, and that only a closer look at the proportions of predication types across the boundaries of nonverbal and verbal predications can disentangle their interrelations. Undertaking this remains a subject of further research. For the remainder of this chapter, I will be concerned exclusively with verbal predications.

Figure 5: Distribution of one- and two-participant clauses, regardless of the predication type, and of mean valence, across genres



9.5.3. DISTRIBUTION OF ALTERNATIONS OVER GENRES

There is a large variation across the genres with respect to the frequency of the different alternations. Although a thorough classification of the linguistic features of genres cannot be undertaken here, a preliminary explication for these differentiating properties can be attempted. Table 8 shows how the passive, one of the most productive alternations in Jalonke, is distributed in the different genres. It accounts for the lowest percentage of all verb tokens in the play, and for the highest percentage of tokens in the letter. Most plausibly, this variation is due to the parameter of plannedness in the sense of Ochs (1979). Relatively unplanned discourse is characterized by less forethought and organizational preparation than relatively planned discourse. Among the linguistic features that are concomitant to the plannedness parameter is voice: according to Ochs (1979), the passive voice is more frequent in planned than in unplanned discourse. In view of the play, a planned genre, featuring the least amount of passives, this finding seems to be contradicted by Jalonke

ARGUMENT REALIZATION IN DISCOURSE

at first sight. The contradiction is resolved, however, if we acknowledge the existence of “planned unplanned discourse” (Ochs 1979: 77), that is, discourse that has been planned to give the impression of being spontaneous. Since the play ‘simulates’ natural interactive discourse, it makes sense to classify it as a genre that is intended to come across unplanned. Under this analysis, the parameter of plannedness may well account for the cline of passives. Passives are low in frequency in the more unplanned genres of plays, action descriptions and conversation. They increase the more the genre in question is planned, as is the case of stories, personal and historical narratives, and to the largest extent of letters.

Table 8: Distribution of passives over genres and in the overall sample (occurrence of verb tokens in percent)

Genre	% of occurrence of the passive
Play	1.9
Action description	2.4
Conversation	2.8
Story	3.2
Speech	5.6
Personal narrative	7.2
Historical narrative	7.3
Letter	8
Overall sample	5.1

Another linguistic feature that is distributed in a quite heterogeneous way over genres is the occurrence of imperatives. Table 9 illustrates their distribution. Their frequency seems to be correlated with the parameters of monological vs. dialogical discourse (Himmelmann 1998). Monological discourse is unlikely to contain imperatives, with the exception of reported direct speech. Within monological genres the frequency of imperatives is thus related to the amount of reported direct speech present in them. Within dialogical genres, the frequency of imperatives is related to the degree of formality and politeness that they exhibit. More formal and polite genres are expected to contain no or few imperatives, but to frame demands, if present, in subjunctives. These expectations are confirmed by the findings: in the polite genres speech and letters, imperatives do not appear, because requests are framed in the more polite subjunctive. In the one monological genre that does not exhibit reported direct speech, the genre of action descriptions, imperatives are absent, too. The other genres either feature reported direct speech or contain direct

CHAPTER 9

commands to the audience – this is marginally the case for historical and personal narratives, and more extensively so for plays, conversations, and stories.

Table 9: Distribution of imperatives over genres and in the overall sample (occurrence of verb tokens in percent)

Genre	% of occurrence of the imperative
Speech	0
Action description	0
Letter	0
Historical narrative	0.2
Personal narrative	0.5
Play	1.9
Conversation	3.6
Story	5.3
Overall sample	1.7

If we turn to the more idiosyncratic alternations, an overview of their frequency in the different genres confirms their general marginality. The unexpressed object alternation, as shown in Table 10, occurs only in five of the eight genres and is directly linked to the presence of one of the five verb types in the lexicon that participate in the alternation.

Table 10: Distribution of the unexpressed O alternation over genres and in the overall sample (occurrence of verb tokens in percent)

Genre	% of occurrence of the unexpressed O alternation
Speech	0
Story	0
Conversation	0.4
Historical narrative	0.5
Letter	0.6
Play	0.6
Action description	1.1
Personal narrative	1.4
Overall sample	0.8

If we get to the applicative alternation, its limitation to one verb type in the sample (as opposed to two verb types in the corpus) yields an even more drastically reduced appearance in the different genres. The frequency of the applicative alternation is illustrated in Table 11.

Table 11: Distribution of the applicative alternation over genres and in the overall sample (occurrence of verb tokens in percent)

Genre	% of occurrence of the applicative alternation
Historical narrative	0
Story	0
Action description	0
Letter	0
Play	0
Speech	0
Personal narrative	0.2
Conversation	0.4
Overall sample	0.2

9.5.4. OVERVIEW OF THE PROPERTIES OF THE DIFFERENT GENRES

Even a very preliminary investigation of the differentiating linguistic features of genres, as undertaken in the preceding section, shows that genres differ on many levels. A more detailed investigation of these differentiating features would probably corroborate the importance of the parameters already sketched and reveal further dimensions of variation. Since such an investigation can not be carried out here, the remaining subsections of this section give an overview of the alternating and non-alternating verb tokens per genre and their lexical argument structure. Furthermore, the sections report the 20 most frequent verbs per genre, since valence is connected to lexical choice and frequent verbs are thus expected to influence the overall patterns of a genre to an important degree (Nichols 1993). In the following, the most frequent verbs per genre are given with their lexical argument structure, their mean syntactic valence and their number of occurrences. Further, some other observed characteristics of the genres are mentioned in a non-exhaustive fashion.

9.5.4.1. STORY

Stories have the lowest mean verbal valence, with a score of 1.39. The 528 verbal clauses of the genre are composed to 49.8% of intransitive verbs, to 0.9% of reflexive-only verbs, to 40.7% of transitive verbs, and to 8.5% of causative/inchoative

CHAPTER 9

verb tokens. The genre does not exhibit many alternations (see Figure 6). Imperatives feature mainly in reported speech or in commands to the audience to listen, be silent, etc. Passives are not very frequent either, most plausibly because it is relevant for the development of the story line to spell out who did what to whom.

Figure 6: Distribution of alternations per argument structure class: story

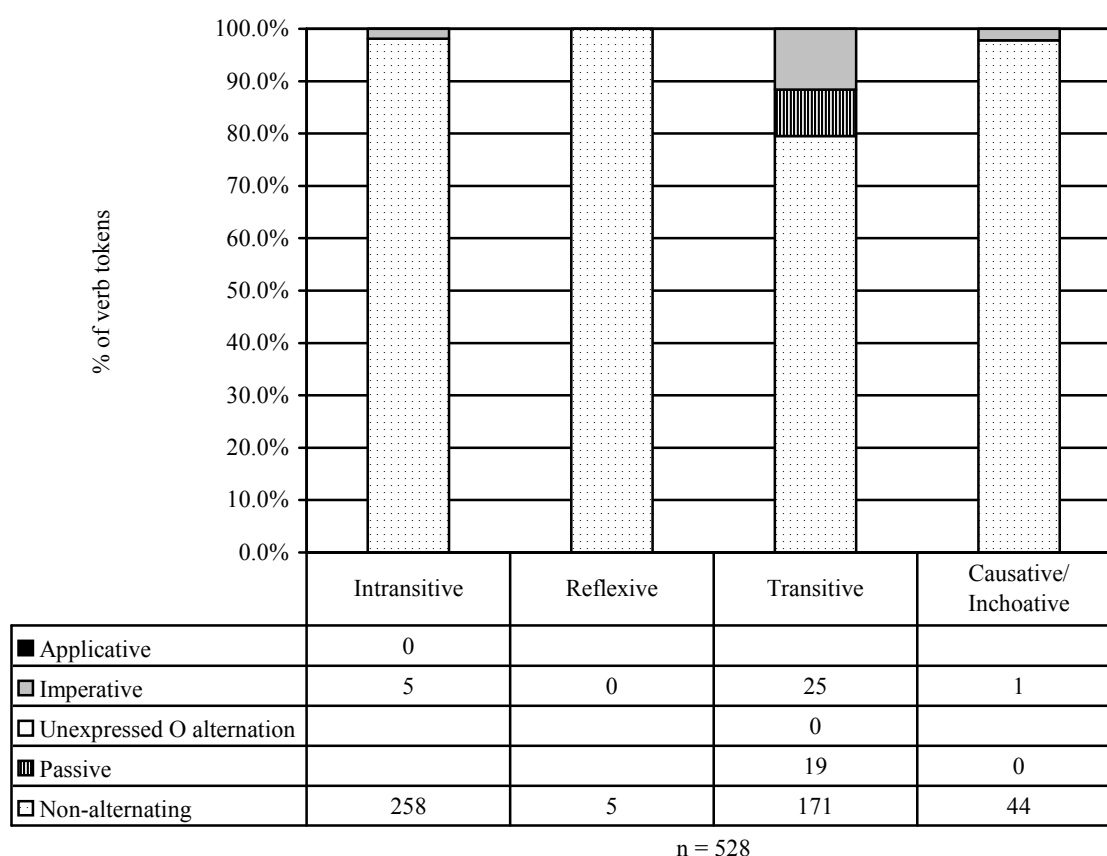


Table 12: Lexeme type frequency, argument structure class, mean valence and token frequency for the 20 most frequent verbs in stories

Lexeme	Gloss	Argument structure class	Mean valence	Token frequency
<i>naxa</i>	‘say’	itr.	1.00	95
<i>faa</i>	‘come’	itr.	.96	50
<i>sigā</i>	‘go’	itr.	.97	35
<i>tongo</i>	‘take’	tr.	1.38	26
<i>lii</i>	‘find’	tr.	1.62	21

ARGUMENT REALIZATION IN DISCOURSE

Lexeme	Gloss	Argument structure class	Mean valence	Token frequency
<i>don</i>	‘eat’	tr.	2.00	15
<i>mini</i>	‘exit’	itr.	1.00	14
<i>dɔxɔ</i>	‘sit (down)’	caus./inch.	1.91	11
<i>tii</i>	‘stand up)’	caus./inch.	2.00	11
<i>baa</i>	‘extract, draw’	tr.	1.90	10
<i>saa</i>	‘lie (down)’	caus./inch.	1.80	10
<i>too</i>	‘see’	tr.	1.80	10
<i>isaxun</i>	‘mix’	tr.	1.78	9
<i>kolon</i>	‘know’	tr.	1.88	8
<i>mɛɛ</i>	‘hear’	tr.	2.00	8
<i>manɛxun</i>	‘be smooth’	itr.	1.00	7
<i>ratee</i>	‘lift’	tr.	1.71	7
<i>xiri</i>	‘tie, fasten’	tr.	1.43	7
<i>lan</i>	‘meet, agree’	itr.	1.00	6
<i>luu</i>	‘stay, remain’	caus./inch.	1.17	6

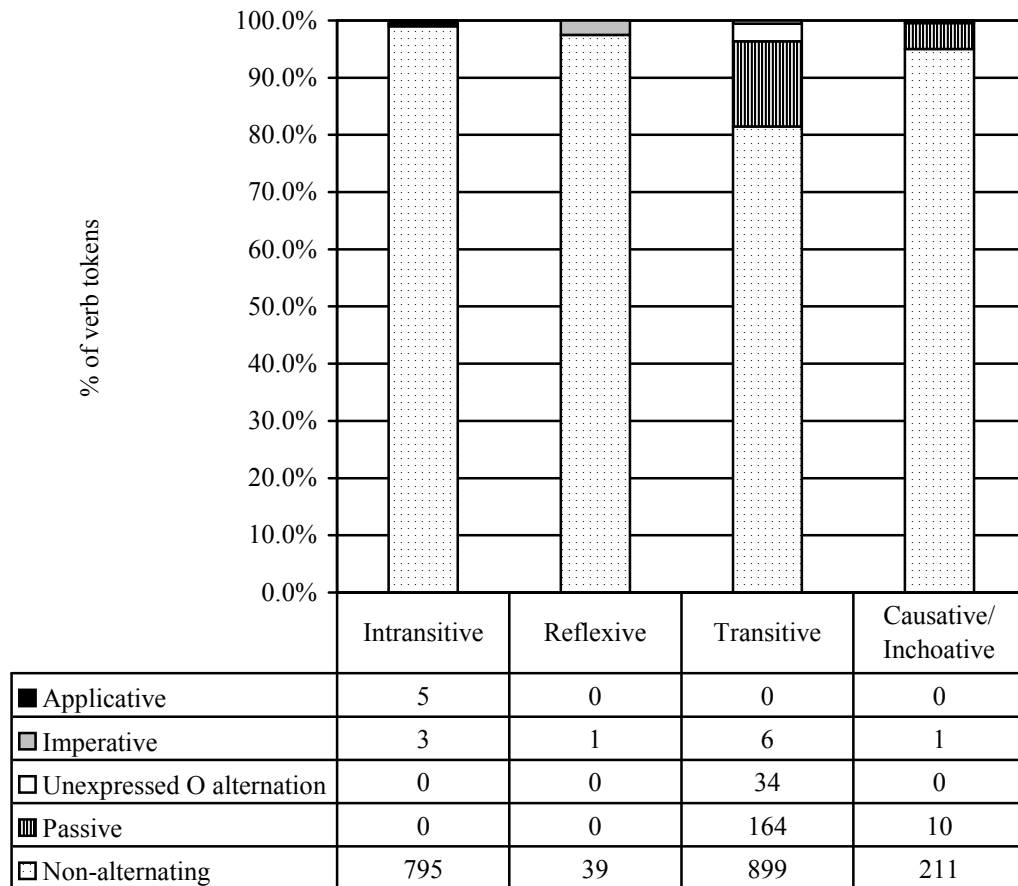
The three most frequent verbs in the genre coincide with the overall most frequent verbs, but their internal order is different: *naxa* ‘say’ occupies the highest range, because it signals reported direct speech, followed by *faa* ‘come’ and *sigə* ‘go’.

9.5.4.2. PERSONAL NARRATIVE

The verbal tokens in personal narratives have a mean valence of 1.47. The 2168 verbal clauses present in the genre are distributed as follows over the argument structure classes: only 37% of them are intransitive, 1.9% are reflexive-only, 50.8% are transitive, and 10.2% are causative/inchoative.

CHAPTER 9

Figure 7: Distribution of alternations per argument structure class: personal narrative



n = 2168

Table 13: Lexeme type frequency, argument structure class, mean valence and token frequency for the 20 most frequent verbs in personal narratives

Lexeme	Gloss	Argument structure class	Mean valence	Token frequency
<i>sigá</i>	‘go’	itr.	.99	189
<i>faa</i>	‘come’	itr.	1.00	149
<i>naxa</i>	‘say’	itr.	1.00	115
<i>lii</i>	‘find’	tr.	1.62	102
<i>keli</i>	‘get up, leave’	itr.	.99	69
<i>rabaa</i>	‘do, make’	tr.	1.61	62
<i>saa</i>	‘lie (down)’	caus./inch.	1.43	58

ARGUMENT REALIZATION IN DISCOURSE

Lexeme	Gloss	Argument structure class	Mean valence	Token frequency
<i>xani</i>	‘send’	tr.	1.96	48
<i>kolon</i>	‘know’	tr.	1.98	47
<i>tongo</i>	‘take’	tr.	1.86	43
<i>luu</i>	‘stay, remain’	caus./inch.	1.31	42
<i>soo</i>	‘enter’	caus./inch.	1.11	36
<i>don</i>	‘eat’	tr.	1.97	34
<i>too</i>	‘see’	tr.	1.97	34
<i>nin</i>	‘cook’	tr.	1.90	29
<i>fala</i>	‘speak’	tr.	1.96	27
<i>dɔxɔ</i>	‘sit (down)’	caus./inch.	1.32	25
<i>xaran</i>	‘learn’	tr.	1.50	24
<i>man</i>	‘be able, capable’	itr.	1.00	23
<i>sara</i>	‘buy’	tr.	1.87	23

Again, we find that the overall most frequent verbs ‘go’, ‘come’ and ‘say’ at the top, because displacement and reported speech are major components of personal narratives. Although these three verbs are followed by transitive verbs, these transitive verbs belong to those with the lowest mean valence, due to their frequent appearance in the passive. Furthermore, a high percentage of the unexpressed object alternation is observable. This high proportion is owed to the frequency of *xaran* ‘read, study’ and *sali* ‘pray’ as activities in two of the texts – one of them describes the educational history of the narrator; the other the pilgrimage of the narrator to Mecca.

9.5.4.3. LETTER

Letters have a mean verbal valence of 1.5. The verbal heads of clauses in letters consist to 35.5% of intransitive verb tokens, to 0.7% of reflexive tokens, to 52.2% of transitive tokens, and to 11.6% of causative/inchoative tokens. What is noticeable in this genre is the complete absence of imperatives, due to its formality and politeness.

CHAPTER 9

Figure 8: Distribution of alternations per argument structure class: letter

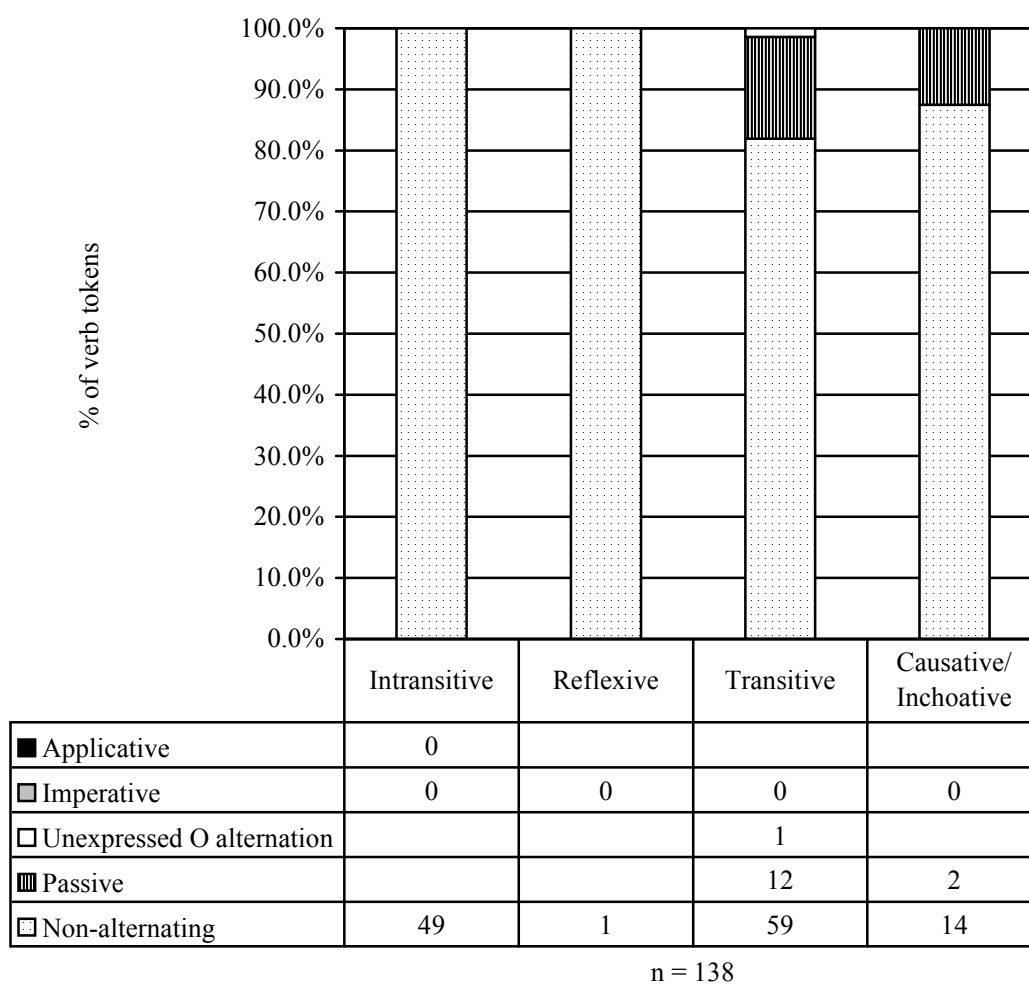


Table 14: Lexeme type frequency, argument structure class, mean valence and token frequency for the 20 most frequent verbs in letters

Lexeme	Gloss	Argument structure class	Mean realized arguments	Token frequency
<i>lii</i>	‘find’	tr.	1.09	11
<i>naxa</i>	‘say’	itr.	1.00	11
<i>fala</i>	‘speak’	tr.	1.75	8
<i>kolon</i>	‘know’	tr.	2.00	7
<i>faa</i>	‘come’	itr.	1.00	5
<i>mεε</i>	‘hear’	tr.	2.00	5

ARGUMENT REALIZATION IN DISCOURSE

Lexeme	Gloss	Argument structure class	Mean realized arguments	Token frequency
<i>saa</i>	‘lie (down)’	caus./inch.	2.00	5
<i>sga</i>	‘go’	itr.	1.00	5
<i>makula</i>	‘ask, beg’	tr.	2.00	4
<i>neemu</i>	‘forget’	itr.	1.00	4
<i>rabaa</i>	‘do, make’	tr.	2.00	4
<i>nen</i>	‘end, stop’	caus./inch.	1.00	3
<i>fii</i>	‘give’	tr.	2.00	3
<i>luu</i>	‘stay, remain’	caus./inch.	2.00	3
<i>maxorin</i>	‘ask’	tr.	2.00	3
<i>tin</i>	‘agree’	itr.	1.00	3
<i>too</i>	‘see’	tr.	2.00	3
<i>wale</i>	‘work’	itr.	1.00	3
<i>xani</i>	‘send’	tr.	2.00	3
<i>dangu</i>	‘pass, overtake’	itr.	1.00	2

The three most frequent verbs in letters are among the overall most frequent verbs. What is noteworthy (and may be either definitional for the genre or an idiosyncratic stylistic feature of the writer, who was always the same person) is the low mean valence for the transitive verb *lii* ‘find’. This verb accounts for almost all the instances of passives in the genre. This finding seems motivated by the regularly occurring use of *lii* ‘find’ in structuring the narrative, as in *a lii* ‘it turned out (lit.: it was found)’.

9.5.4.4. HISTORICAL NARRATIVE

The mean verbal valence in historical narratives is 1.51. Verbal clauses in the genre are composed to 30.9% of intransitive verbs, to 1.7% of reflexive-only verbs, to 53.9% of transitive verbs, and to 13.5% of causative/inchoative verbs. There is only one imperative present in the genre, due to a reported command. *Rabaa* ‘do, make’ is the most frequent verb, due to its frequent functioning as the verbal predicate (often in the passive) in subordinate clauses that serve to temporally frame a main clause (cf (8) above). Noteworthy is the frequent occurrence of *ramaxa* ‘tremble’, due to one of the texts that describes an earthquake.

CHAPTER 9

Figure 9: Distribution of alternations per argument structure class: historical narrative

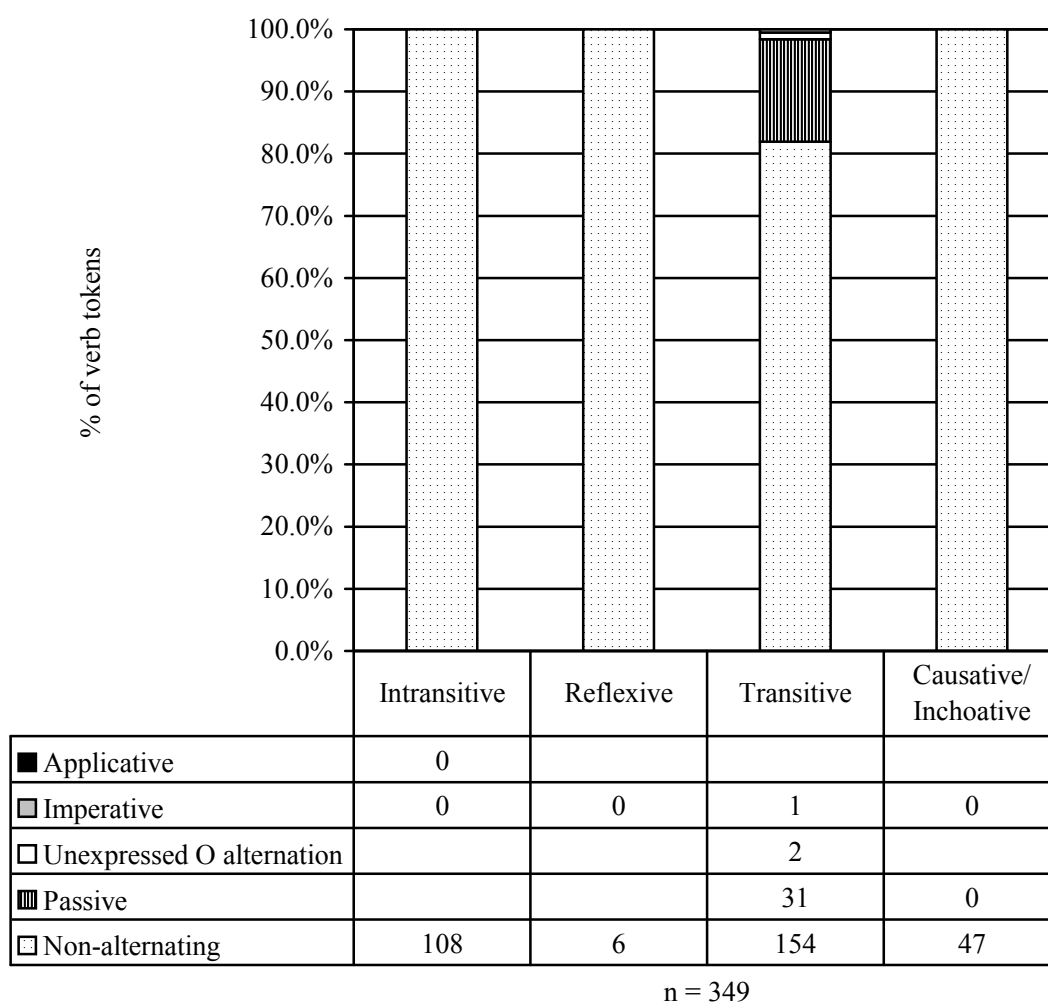


Table 15: Lexeme type frequency, argument structure class, mean valence and token frequency for the 20 most frequent verbs in historical narratives

Lexeme	Gloss	Argument structure class	Mean realized arguments	Token frequency
<i>rabaa</i>	‘do, make’	tr.	1.63	27
<i>naxa</i>	‘say’	itr.	1.00	22
<i>faa</i>	‘come’	itr.	1.00	20
<i>ramaxa</i>	‘shake’	tr.	1.89	18
<i>lii</i>	‘find’	tr.	1.79	14

ARGUMENT REALIZATION IN DISCOURSE

Lexeme	Gloss	Argument structure class	Mean realized arguments	Token frequency
<i>suxu</i>	‘seize’	tr.	2.00	14
<i>sigā</i>	‘go’	itr.	1.00	11
<i>kolon</i>	‘know’	tr.	2.00	10
<i>fala</i>	‘speak’	tr.	2.00	9
<i>i</i>	‘say’	tr.	1.88	8
<i>mæε</i>	‘hear’	tr.	2.00	8
<i>kwisan</i>	‘be astonished’	itr.	1.00	7
<i>rakeli</i>	‘make leave’	tr.	2.00	7
<i>jita</i>	‘show’	tr.	1.50	6
<i>luu</i>	‘stay, remain’	caus./inch.	1.17	6
<i>xɔnɔ</i>	‘hurt’	caus./inch.	2.00	6
<i>dɔxɔ</i>	‘sit (down)’	caus./inch.	1.00	5
<i>lan</i>	‘meet, agree’	itr.	1.00	5
<i>saa</i>	‘lie (down)’	caus./inch.	1.40	5
<i>keli</i>	‘get up, leave’	itr.	1.00	4

9.5.4.5. CONVERSATION

Conversation has a mean verbal valence of 1.52. In the genre, verbal clauses are headed to 33.8% by intransitive verbs, to 1.5% by reflexive-only verbs, to 53.1% by transitive verbs, and to 11.6% by causative/inchoative verbs. Noteworthy are the two motion verbs *faa* ‘come’ and *sigā* ‘go’ leading the list of the most frequent verbs – whenever somebody’s actions are reported, his movement patterns are attended to in great granularity. All verbs of directed motion in the genre have an exceptionally low mean valence, due to their frequent occurrence in the imperative. Among the most frequent verbs are many verbs of communication and perception – the former are due to the frequent reported speech in the genre; the latter to the frequent questions to the audience whether they have ‘got’ the message and the following confirmation.

CHAPTER 9

Figure 10: Distribution of alternations per genre: conversation

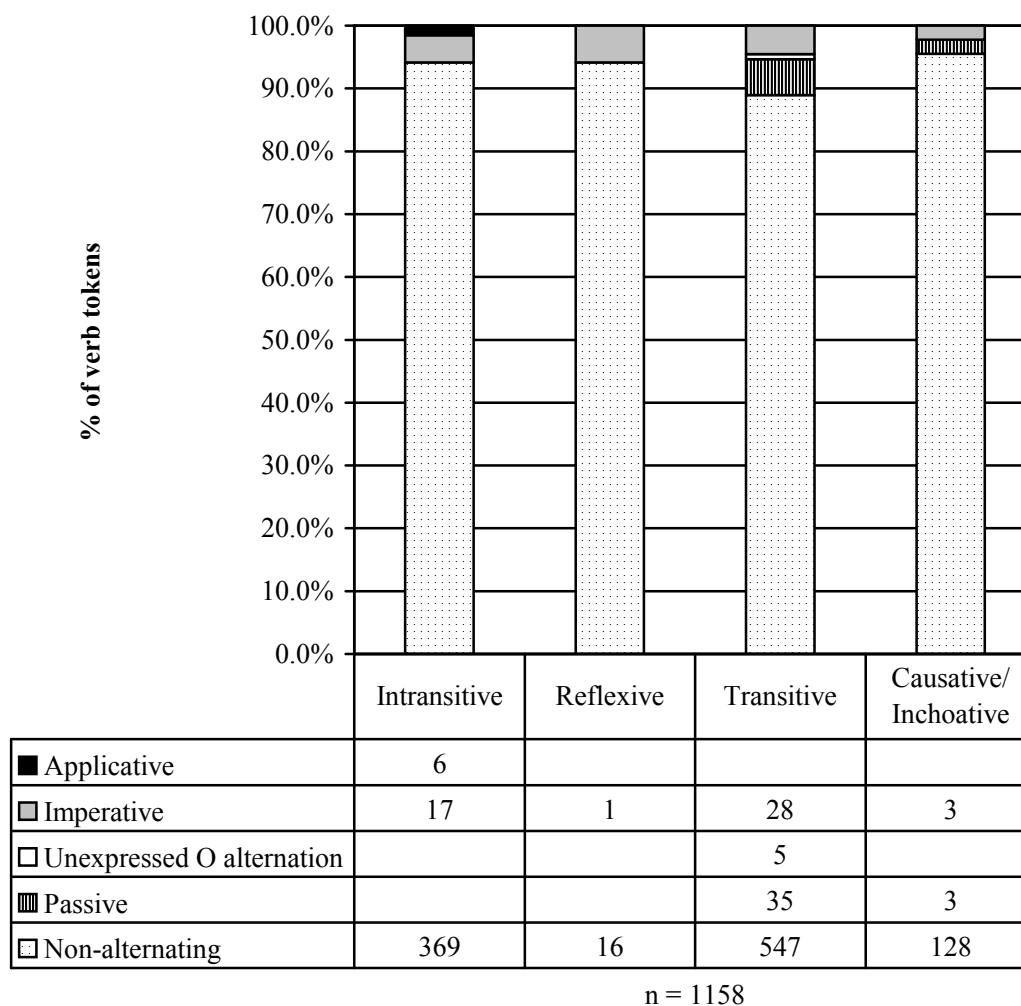


Table 16: Lexeme type frequency, argument structure class, mean valence and token frequency for the 20 most frequent verbs in conversation

Lexeme	Gloss	Argument structure class	Mean realized arguments	Token frequency
<i>sigá</i>	‘go’	itr.	0.96	68
<i>faa</i>	‘come’	itr.	0.89	64
<i>kolon</i>	‘know’	tr.	2.00	55
<i>fala</i>	‘speak’	tr.	1.93	42
<i>too</i>	‘see’	tr.	2.00	42
<i>man</i>	‘be able’	itr.	1.00	39
<i>lii</i>	‘find’	tr.	1.81	31

ARGUMENT REALIZATION IN DISCOURSE

Lexeme	Gloss	Argument structure class	Mean realized arguments	Token frequency
<i>naxa</i>	‘say’	itr.	1.00	31
<i>mɛɛ</i>	‘hear’	tr.	2.00	27
<i>saa</i>	‘lie (down)’	caus./inch.	1.70	27
<i>rabaa</i>	‘do, make’	tr.	1.96	24
<i>sɔtɔ</i>	‘find’	tr.	1.92	24
<i>tongo</i>	‘take’	tr.	1.95	21
<i>tii</i>	‘stand (up)’	caus./inch.	1.35	20
<i>luu</i>	‘stay, remain’	caus./inch.	1.68	19
<i>matoo</i>	‘watch’	tr.	1.78	18
<i>falaa tii</i>	‘speak’	tr.	2.00	15
<i>i</i>	‘say’	tr.	2.00	15
<i>keli</i>	‘get up, leave’	itr.	.80	15
<i>lan</i>	‘meet, agree’	itr.	1.00	15

9.5.4.6. *PLAY*

In the play, the mean value for verbal valence is 1.54. In this genre, the distribution of verbal predications over argument structure classes is as follows: it contains 34.4% of intransitive, 3.6% of reflexive-only, 48.9% of transitive, and 13.4% of causative/inchoative tokens.

CHAPTER 9

Figure 11: Distribution of alternations per argument class: play

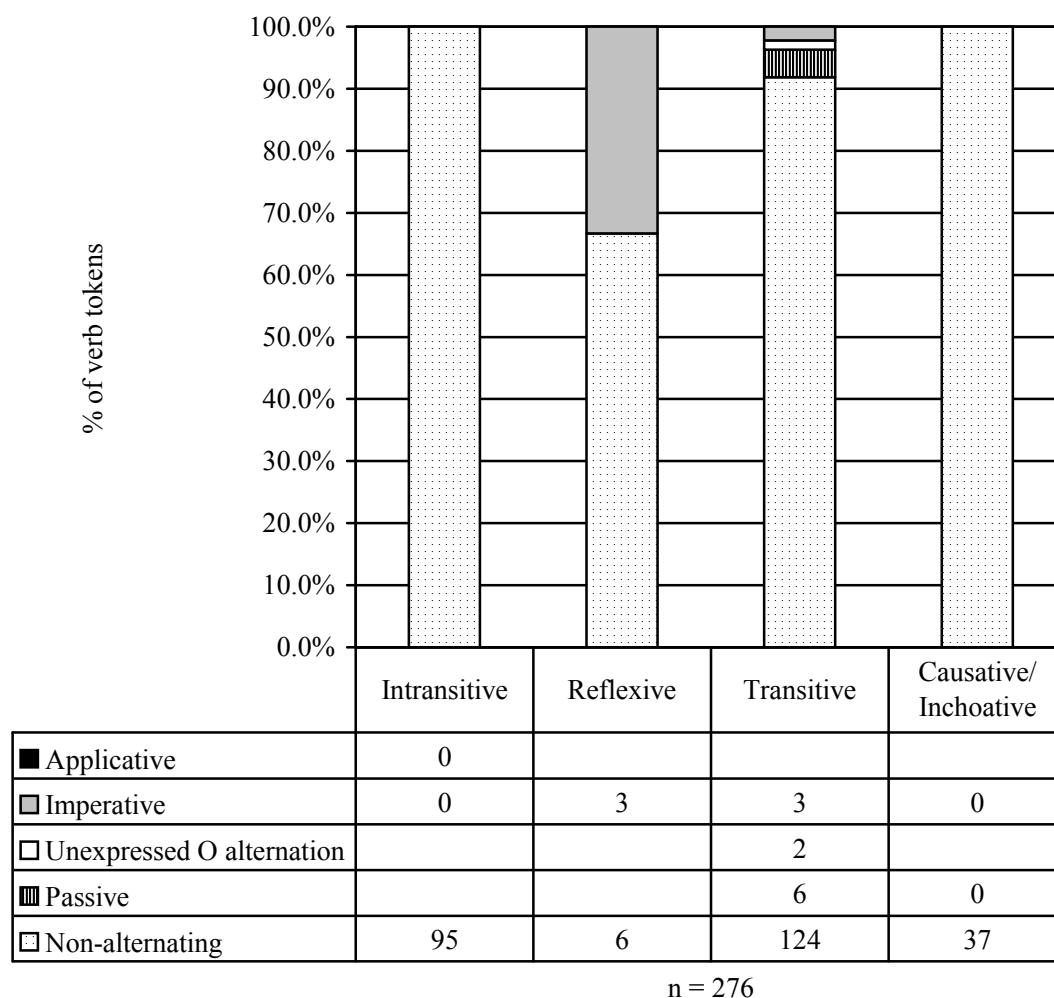


Table 17 : Lexeme type frequency, argument structure class, mean valence and token frequency for the 20 most frequent verbs in the play

Lexeme	Gloss	Argument structure class	Mean realized arguments	Token frequency
<i>faa</i>	‘come’	itr.	1.00	22
<i>sga</i>	‘go’	itr.	1.00	18
<i>luu</i>	‘stay, remain’	caus./inch.	1.67	12
<i>xɔnɔ</i>	‘hurt’	caus./inch.	2.00	10
<i>baa</i>	‘extract, draw’	tr.	1.89	9
<i>don</i>	‘eat’	tr.	1.89	9

ARGUMENT REALIZATION IN DISCOURSE

Lexeme	Gloss	Argument structure class	Mean realized arguments	Token frequency
<i>matoo</i>	‘watch’	tr.	1.88	8
<i>kolon</i>	‘know’	tr.	2.00	7
<i>tuu</i>	‘die’	itr.	1.00	6
<i>fala</i>	‘speak’	tr.	2.00	5
<i>fii</i>	‘give’	tr.	2.00	5
<i>goo</i>	‘be abundant’	itr.	1.00	5
<i>keli</i>	‘get up, leave’	itr.	1.00	5
<i>min</i>	‘exit’	tr.	1.60	5
<i>waa</i>	‘cry’	itr.	1.00	5
<i>dangu</i>	‘pass’	itr.	1.00	4
<i>findi</i>	‘transform’	caus./inch.	1.00	4
<i>fura</i>	‘be sick’	itr.	1.00	4
<i>jebu</i>	‘heal’	tr.	2.00	4
<i>lan</i>	‘meat, agree’	itr.	1.00	4

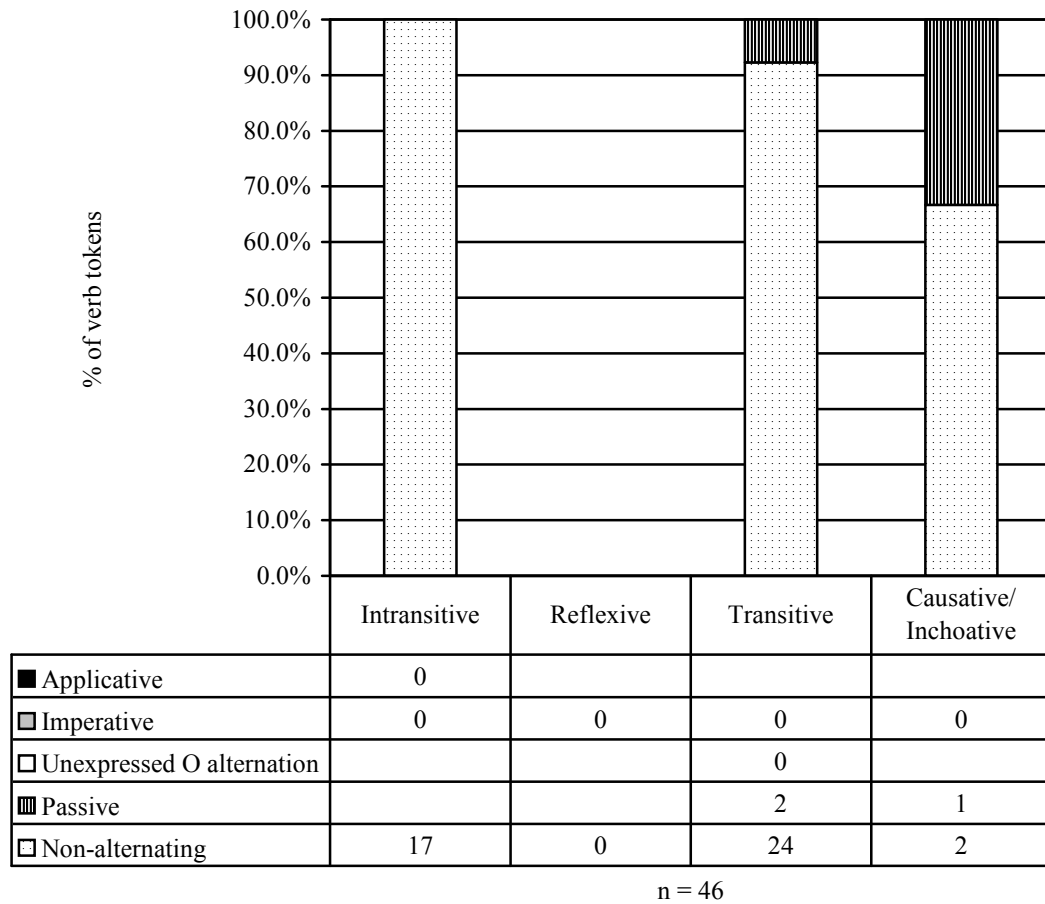
Apart from the overall most frequent verbs, the play contains a number of verbs related to health and sickness – *xɔnɔ* ‘hurt’, *tuu* ‘die’, *fura* ‘be sick’ and *jebu* ‘heal’. Their occurrence is motivated by the plot of the play, the story of a woman who dies of diarrhea from drinking polluted water.

9.5.4.7. SPEECH

The verbal clauses in the speech exhibit a mean valence of 1.54. In the genre, 36.9% of verbal clauses feature intransitive verbs, 56.5% feature transitive verbs, and 6.5% feature causative/inchoative verbs.

CHAPTER 9

Figure 12: Distribution of alternations per genre: speech



ARGUMENT REALIZATION IN DISCOURSE

Table 18: Lexeme type frequency, argument structure class, mean valence and token frequency for the 20 most frequent verbs in the speech

Lexeme	Gloss	Argument structure class	Mean realized arguments	Token frequency
<i>lii</i>	‘find’	tr.	1.67	3
<i>niixan</i>	‘be happy’	itr.	1.00	2
<i>faa</i>	‘come’	itr.	1.00	2
<i>kanta</i>	‘protect’	tr.	2.00	2
<i>keli</i>	‘get up, leave’	itr.	1.00	2
<i>makula</i>	‘ask, beg’	tr.	2.00	2
<i>malii</i>	‘help’	tr.	2.00	2
<i>rakolon</i>	‘make know’	tr.	2.00	2
<i>beni</i>	‘leave’	tr.	2.00	1
<i>binja</i>	‘respect’	tr.	2.00	1
<i>fala</i>	‘speak’	tr.	2.00	1
<i>fan</i>	‘be nice’	itr.	1.00	1
<i>fisa</i>	‘be better’	itr.	1.00	1
<i>goro</i>	‘descend’	itr.	1.00	1
<i>isaxun</i>	‘mix’	tr.	2.00	1
<i>kafu</i>	‘add’	caus./inch.	1.00	1
<i>kolon</i>	‘know’	tr.	2.00	1
<i>lan</i>	‘meet, agree’	itr.	1.00	1
<i>luu</i>	‘stay, remain’	caus./inch.	2.00	1
<i>malan</i>	‘assemble’	tr.	1.00	1

The speech reflects its topic, the inauguration of a health post, through the choice of verbs – they comprise verbs of positive emotions, verbs of communication, and verbs that describe the process of building the health post – *malan* ‘assemble’, *makula* ‘ask, beg’, and *malii* ‘help’ among others.

9.5.4.8. ACTION DESCRIPTION

The mean verbal valence for action descriptions is 1.61. In this genre, only 29.2% of verbal clauses comprise intransitive verb tokens; 2.4% comprise reflexive-only tokens, 52% comprise transitive tokens, and 16.4% comprise causative/inchoative tokens. Overall, the frequency of transitive verbs is quite remarkable in the genre. Since the genre, pressed upon the speakers by me, mainly consists in descriptions of actions as they occur in a video shown to them, this is not surprising: narrators were pressed for time and could not develop a story line with a relative low density

CHAPTER 9

of information packaging. Moreover, they were focusing on the description of actions which were in most cases object manipulations, without a narrative goal that could have been reflected in temporal framing, introduction of the proponents, comments on their properties, etc.

Figure 13: Distribution of alternations per genre: action description

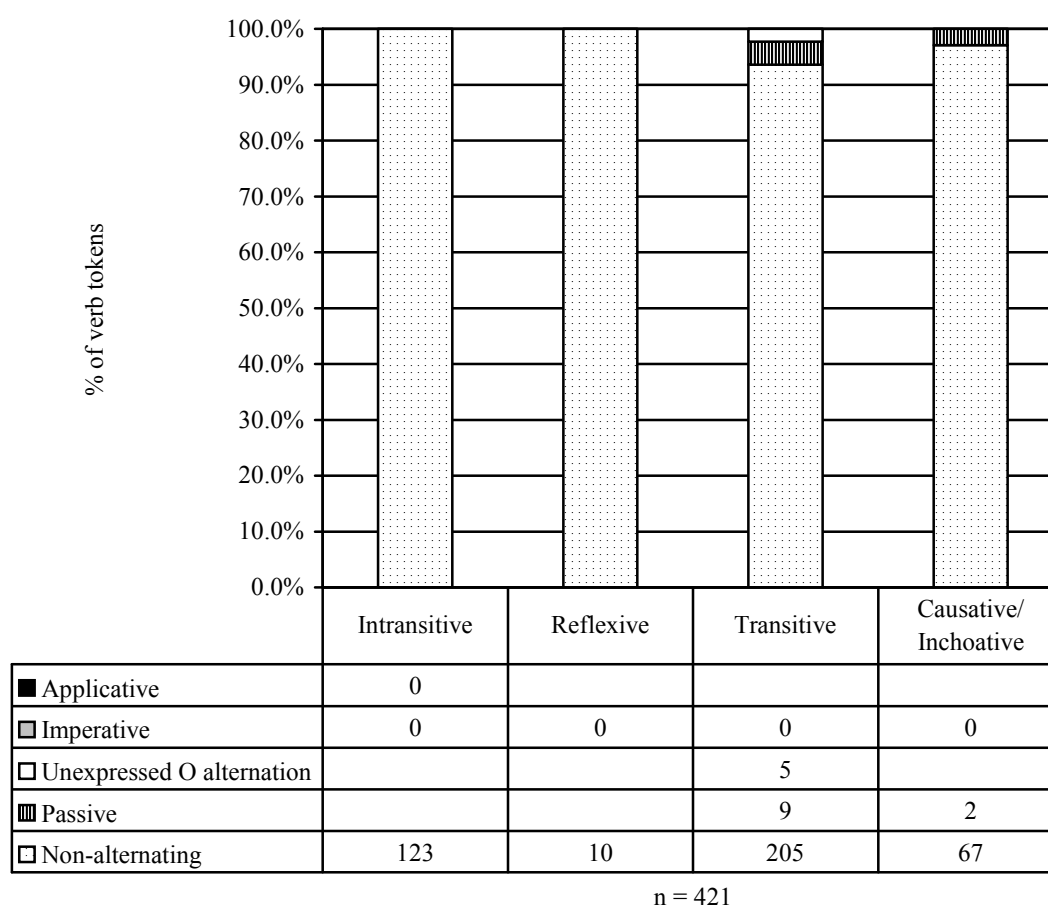


Table 19: Lexeme type frequency, argument structure class, mean valence and token frequency for the 20 most frequent verbs in action description

Lexeme	Gloss	Argument structure class	Mean realized arguments	Token frequency
<i>bombɔ</i>	'hit'	tr.	2.00	30
<i>saa</i>	'lie (down)'	caus./inch.	2.00	30
<i>tin</i>	'agree'	itr.	1.00	28

ARGUMENT REALIZATION IN DISCOURSE

Lexeme	Gloss	Argument structure class	Mean realized arguments	Token frequency
<i>faa</i>	‘come’	itr.	1.00	20
<i>sigə</i>	‘go’	itr.	1.00	19
<i>dɔxɔ</i>	‘sit (down)’	caus./inch.	1.41	17
<i>tongo</i>	‘take’	tr.	2.00	16
<i>xara</i>	‘be dry’	itr.	1.00	13
<i>ralee</i>	‘spread out’	tr.	1.82	11
<i>don</i>	‘eat’	tr.	1.90	10
<i>mini</i>	‘exit’	itr.	1.00	10
<i>xɔrɔ</i>	‘scratch’	tr.	2.00	10
<i>xaa</i>	‘wash’	tr.	2.00	10
<i>ragoro</i>	‘lower’	tr.	2.00	8
<i>raxaa</i>	‘wash’	tr.	2.00	8
<i>soo</i>	‘enter’	caus./inch.	1.50	8
<i>jogon</i>	‘soak’	tr.	2.00	7
<i>ibɔmbɔ</i>	‘hit again’	tr.	2.00	6
<i>makafu</i>	‘increase’	tr.	2.00	6
<i>maxa</i>	‘be far’	itr.	1.00	6

9.5.5. DISCUSSION OF THE FINDINGS FOR GENRES

In summary, the different genres reflect cross-linguistically attested properties associated with their discourse functions – planned genres exhibit more passives than unplanned genres, and polite dialogical genres exhibit less imperatives than direct genres. Independently of these ‘metastructures’, lexical choice determines the valence patterns of genres considerably – given the high proportion of non-alternating verb tokens within and across genres, verb choice is closely aligned with valence. The influence of individual verbs on valence patterns is even stronger when it comes to those alternations that fall under morpholexical operations. The frequency of occurrence of the unexpressed object alternation and the applicative alternation is completely dependent on the occurrence of the few verb types that are eligible for these alternations.

9.6. VARIATION ACROSS SPEAKERS AND TEXTS

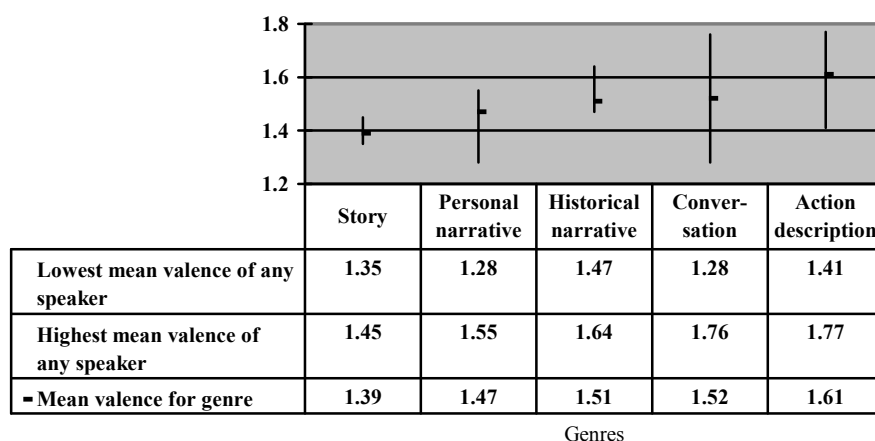
9.6.1. VARIATION ACROSS SPEAKERS

An assessment of the variation across speakers was only possible where a sufficient number of clauses from different genres was represented for several speakers

CHAPTER 9

in the corpus. Given the limitations of a small, field-based corpus, such a comparison was only possible for a limited number of speakers and genres. Therefore, no comparison within speakers across genres and texts or across speakers within genres and texts was possible. Figure 14 compares the lowest and highest mean valence values for the speakers represented by a minimum of 45 clauses in the sample.

Figure 14: Speakers with the highest and lowest mean valence in each genre



The number of speakers for whom enough data were available varies between 3 and 12 speakers per genre. For each genre, in addition to the valence range according to speaker, the mean valence of the genre is indicated. We find some telling differences with respect to the range of variation per speaker: stories exhibit the least variation, followed by personal and historical narratives. Action description and most noteworthy conversation differ more radically in their valence patterns according to speakers. These differing ranges are not linked to the number of speakers investigated per genre: for stories, personal narratives and action descriptions, 3 speakers per genre were looked at; for conversation and action description, sufficient data for 7 and 12 speakers respectively were available. We have seen in the previous sections that valence patterns are determined to ca. 90% by the argument structure class membership of verbs, and consequently by lexical choice. It is thus very likely that the range of variation is aligned with the degree of formulaicity of the genre. Genres that are part of the oral repertoire and transmitted from

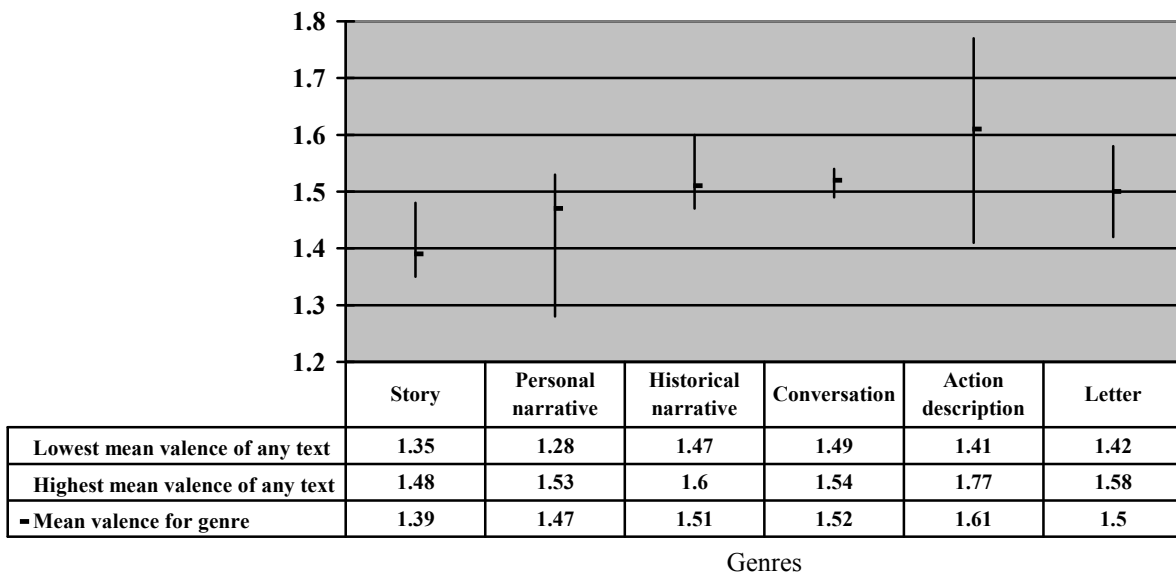
ARGUMENT REALIZATION IN DISCOURSE

generation to generation (stories) or strongly conventionalized in terms of ‘narrative templates’ (personal and historical narratives) would then minimize the stylistic freedom of the narrator. Genres whose content is less predetermined, but created on the spot, as conversation and action description, would then mirror the absence of predictable content in more diverse lexical, and hence, valence patterns.

9.6.2. VARIATION ACROSS TEXTS

With respect to an investigation of valence patterns across texts, the constraints limiting the comparison of valence patterns across texts apply: only a small number of sufficient texts of different genres was available. In consequence, again, only a selection of genres could be examined. The result is shown in Figure 24.

Figure 15: Texts with the highest and lowest mean valence values in each genre



Interestingly, the emerging picture is partly diametrically opposed to the findings from 9.6.1: conversation, the genre with the highest inter-speaker variability, is by far the genre with the lowest inter-text variability in valence patterns. This puzzle receives an explanation when taking the characteristics of the genre into consideration: any speaker-individual preferences are neutralized through the high number of speakers and the low degree of conventionalization of the content. Stories, personal and historical narratives exhibit the next to lowest range in variation across texts. For action description and letters, the variability increases until finding its cumulating point in letters. Conversation exempted, the cline is thus comparable to

the one for variation across speakers – not surprisingly, since the other investigated texts consist of monologues, and texts thus represent speakers.

9.6.3. DISCUSSION OF THE FINDINGS FOR SPEAKERS AND TEXTS

The comparison across speakers and texts was sparse, due to the limited data base. Nevertheless, the comparison revealed characteristics of genres with respect to the freedom of individual speakers in lexical choice, which is the highest in genres consisting of non-conventionalized speech, and the lowest in genres imposing conventions in form and content on the speakers. A look at the range of variation across texts according to genre confirmed these findings in showing how individual texts are faithful to the overall characteristics of the genre.

9.7. SUMMARY

This chapter has tested the degree of correspondence of the independently established argument structure properties of Jalonke verbs with patterns of argument realization in discourse. It has been shown that in Jalonke, the alignment between lexical argument structure and argument realization in discourse is much closer than in English (Thompson & Hopper 2001). It further has been shown that the slight misalignment between argument structure and argument realization can be explained in terms of alternations. Verbs realize the number of lexically specified arguments in 92.2% of all cases in the quantitative study. It has turned out that the 8.2% of cases in which arguments are not realized in Jalonke discourse fall almost exclusively under the imperative and the passive alternation. The unexpressed object alternation however, widespread in English, is marginal in Jalonke. In chapter 7, it was established that the unexpressed object alternation occurs only with very few verb types in the lexicon. This fact was explained through the existence of a morphologically not marked passive in Jalonke: in a single-argument clause with a transitive verb, the subject is interpreted as a Theme. Hence the omission of the Theme of a transitive verb, as in the unexpressed object alternation, would result in a passive reading for the clause, not in an unexpressed object reading, and is therefore blocked for the majority of verbs. In this chapter, it has become evident that the unexpressed object alternation is also marginal with respect to its token frequency. In chapter 7, it was also shown that one alternation, the applicative alternation, occurs with only two verb types in the lexicon. Corresponding to the lack of productivity of the alternation is its marginal frequency in the sample. Thus, already an investigation of the overall sample has revealed that the number of arguments realized by a given verb is not random, but close to its argument structure,

and that alternations account for the totality of deviations from argument structure. It might be argued that this outcome is due to circularity, since all deviations were previously identified as alternations, not as unstable or labile valence. Any alternative account for the marginal deviations from argument structure could only be one in terms of pro-drop, since the alignment between argument structure and number of realized arguments is way too close for positing total lability or far-ranging polysemy of verbs. A pro-drop analysis is, however, unsatisfying on the following grounds:

It has become obvious that intransitive verbs only drop their subject in the imperative, not normally counted as subject-drop. An account of the Jalonke passive in terms of pro-drop would thus have to explain the so far non-attested existence of a language that allows zero subjects of transitive verbs, but not zero subjects of intransitive verbs. Furthermore, for a pro-drop account one would expect the largest degree of dropped arguments in contexts where they are recoverable from the discourse context. No such correspondence has emerged from the quantitative study. Moreover, arguments in Jalonke, where they are present, do not automatically facilitate reference-tracking: in the majority of occurrences, arguments do not consist of lexical nouns, but of 3SG pronouns, whose disambiguation exclusively relies on the context. The primary function of these pronouns, just like the function of cognate and generic objects described in 7.4.3.1, does not seem to be unambiguous reference. Rather, they are all placeholders in order to signal active in contrast to passive voice, indicative as opposed to imperative. Finally, a pro-drop analysis fails completely when it comes to the morpholexical operations among the alternations. As predicted in the qualitative account, only very few verb types could be said to drop objects (which would be an alternative account for the unexpressed object alternation). However, no special discourse context for specifically these verbs could be found to justify argument ellipsis. Further, the majority of eligible verbs is excluded from dropping objects, regardless of the surrounding discourse. Therefore, a pro-drop account would blur the fact that the admissibility of an unexpressed object is conditioned by the lexical semantics of the verbs in question. Similar observations hold for the applicative alternation: these verbs could be described as optionally transitive and downgrading their objects under certain circumstances. This downgrading is, in analogy to the findings for the unexpressed object alternation, extremely limited in scope over verb type. In addition, the applicative alternation is only attested for a very small number of NPs, a finding that strengthens the morpholexical character of the operation.

CHAPTER 9

An investigation of the variation in argument realization across genres has corroborated and refined the findings from the overall sample. Even the genre with the lowest mean valence, story, which exhibits a mean valence of 1.39, reaches this score through the presence of a large percentage of intransitive verbs, not through an extraordinarily great number of discrepancies between argument structure and number of realized arguments. Although the percentage of alternations differs from genre to genre, it has been shown that their distribution depends on two factors. For the morphosyntactic operations among the alternations, the passive and the imperative, the deciding factor is the nature of the genre. Plannedness vs. unplannedness of the genre predicts the frequency of passives, and dialogical vs. monological character together with politeness of the genre governs the frequency of imperatives. For the morpholexical operations among the alternations, the unexpressed object and the applicative alternation, lexical choice alone determines their possibility of occurrence. For the unexpressed object alternation, as an additional parameter, the choice of lexical aspect to frame the situation differently is present for the concerned verb type (see 7.4.3).

With respect to the degree of variation across speakers and texts, it has become evident that a high degree of conventionalization goes hand in hand with a low range of variability. A low degree of conventionalization, in contrast, triggers more variation in valence patterns.

As a further result of the quantitative study, it can be confirmed through discourse patterns that Jalonke is a ‘fundamental transitive language’ in Nichols’ (1981, 1982, 1993) and Nichols’ *et al* (1999) terms. The language has not only a larger frequency of transitive verb types than of intransitive verb types in the lexicon, but also a greater number of transitive verb types as well as verb tokens in discourse. To a limited extent, this preference for transitive verbs in discourse can be explained by the large number of non-verbal predications covering semantic domains expressed by (verbal) copula clauses in Indo-European languages. However, even when comparing only transitive vs. intransitive verbs in discourse, a preference for the former can best be explained by language-individual lexicalization patterns.

To conclude, the quantitative study has confirmed the qualitative findings from chapters 3-7; it has addressed and refuted other possible or attested cross-linguistic motivations underlying deviations from argument structure and argument realization; and it has shown that approaches denying a lexical argument structure for other closely related languages or universally are not applicable to Jalonke. As

ARGUMENT REALIZATION IN DISCOURSE

such, the study has demonstrated the necessity of more quantitative and in-depth language-individual analyses of argument structure and its alignment with valence, as in Bickel (2003), to inform a future typology of argument structure and argument realization.

The next and final chapter of this thesis will summarize the main findings and place them into a wider theoretical context.

CONCLUSION

CHAPTER 10

This chapter gives a summary of the findings of this thesis and their contribution to language description and to a theory of argument structure.

10.1. SUMMARY OF THE THESIS

This thesis has investigated a central part of Jalonke grammar: verbal argument structure. It has defined the four major argument structure classes of the language and their aspectual and causal properties. Since these properties of verbs are intricately linked to the number and status of their participants, which determine the syntactic configurations for verbs, the thesis also covered a major portion of clause structure in Jalonke. Chapter 1 outlined the major motivation for investigating verbal argument structure, and gave an introduction to the language and its speakers as well as to the theoretical framework employed. Chapter 1 also explained the methodology adopted and the kinds of data underlying the analyses and presented the semantic tests employed throughout the study. Chapter 2 consists of a grammatical sketch. This sketch fills a descriptive gap, since no previous grammar of Jalonke is available. The sketch also served as a necessary background for the treatment of argument structure classes and their properties in the following chapters. Chapters 3 to 6 were concerned with establishing the four large argument structure classes of Jalonke. Chapter 3 started this venture by looking at intransitive verbs; chapter 4 treated transitive verbs; chapter 5 focused on causative/inchoative alternating verbs; and chapter 6 explored reflexive-only verbs. Chapter 7 investigated operations that change the valence and/or meaning of Jalonke verbs and classified them in terms of morphosyntactic and morpholexical operations. Chapter 8 introduced unaccusativity, manifest in Jalonke as a split among intransitive verbs visible in the possessive constructions in which they occur. Chapter 9 ended the survey of Jalonke argument structure by looking at the discourse realization of arguments and whether this realization is aligned with lexical argument structure.

10.2. CONTRIBUTION TO LANGUAGE DESCRIPTION

This thesis constitutes the first documentation of Jalonke, a Central Mande language of Guinea. The thesis is based on 11 months of fieldwork. The fieldwork resulted in the collection of a corpus of 21 hours of recorded texts, covering various genres. The corpus further contains staged communicative events that resulted from the use of various visual stimuli. These data were complemented by elicited data, resulting from the use of questionnaires, but also from detailed elicitation of the semantic and morphosyntactic properties of all the 422 verbs listed in Appendix 4. All the data were transcribed; most of them were annotated; and all transcriptions and annotations were entered into an electronic corpus structure, together with the audio or video source file and metadata.¹

All the data collected were used in three different databases. The Jalonke lexicon was fed by observations from all kinds of data and complemented with the results of detailed elicitations for 422 verbs with at least two consultants. The Jalonke corpus was fed by data corresponding to observed and staged communicative events, that is, observed natural data as well as data based on stimuli. The corpus does not contain results from elicitations. This corpus was used for text searches. Finally, a cross-section of the corpus was selected as the database for the quantitative study in chapter 9. This cross-section, referred to as the sample throughout the thesis, consists exclusively of observed communicative events and a selection of staged communicative events, the so-called ‘action descriptions’.

The analyses presented in this thesis have benefited from these diverse kinds of data. First evidence on the syntactic behavior of verbs was obtained on the base of observed communicative events. Small field based corpora are, however, limited in the information they offer. Therefore, impressions gained from the inspection of these natural data were systematically complemented and expanded through careful elicitation, questionnaires, stimuli, and experiments, where appropriate. Most of these data allow only a qualitative appraisal of the phenomena they investigated. Some of the data resulting from stimuli and/or questionnaires, however, lend themselves to a quantitative analysis, because they were collected from between 3 and 12 speakers. Data based on visual stimuli have some advantages over natural data, since they allow assessing, controlling and varying the real-world context for the

¹ *The structure and description of the corpus, although not the data, can be accessed through <http://corpus1.mpi.nl/BC/IMDI-corpora/MPI%20corpora/Language%20&%20Cognition/africa/Jalonke/Lupke>*

CONCLUSION

resulting linguistic description. Furthermore, data based on stimuli lend themselves to a direct cross-linguistic comparison, which is one of the methods of the Language & Cognition group at the MPI. (See Levinson & Meira 2003, Pederson *et al* 1998, and Hellwig in prep. for the advantages of stimuli-based data for language-particular analysis and comparison across languages.) Stimuli-based results are, however, limited in their usability in field settings: stimuli can only be run with a small number of consultants, and sophisticated experimental situations are impossible to set up. Therefore, a third database was created and set up so as to allow the quantification of the qualitative analyses for a larger number of speakers represented with a relatively large number of utterances from as many genres and texts as possible. Although this sample was not used for statistical tests, it allowed a verification of the analyses based on individual speakers and on an inspection of corpus data.

The quantitative data were specifically relevant for three domains which are a subject of debate within Mande linguistics and within theories of argument structure. The data allowed an appraisal of the noun/verb distinction, controversial for Mande languages, and showed that although all verbs can appear underived as nouns, only very few actually do so in texts (cf. 2.4.1). The distribution of active and passive readings for transitive verbs permitted an analysis of the equally controversial (and cross-linguistically uncommon) morphologically unmarked passive as being indeed a passive (cf. 7.3.2). An inspection of verb tokens that appear with the number of arguments lexically specified by the verb, vs. those that appear with less or more arguments, revealed that the degree of alignment between lexical argument structure and argument realization is very close in Jalonke (cf. chapter 9). Thus, the quantitative study served to confirm the existence of lexical argument structure as a level of information structure reflected in discourse. In doing so, the study demonstrated that approaches that eschew this level of information structure cannot be applied to Jalonke, and thus are not universally applicable.

10.3. CONTRIBUTION TO THEORIES OF ARGUMENT STRUCTURE

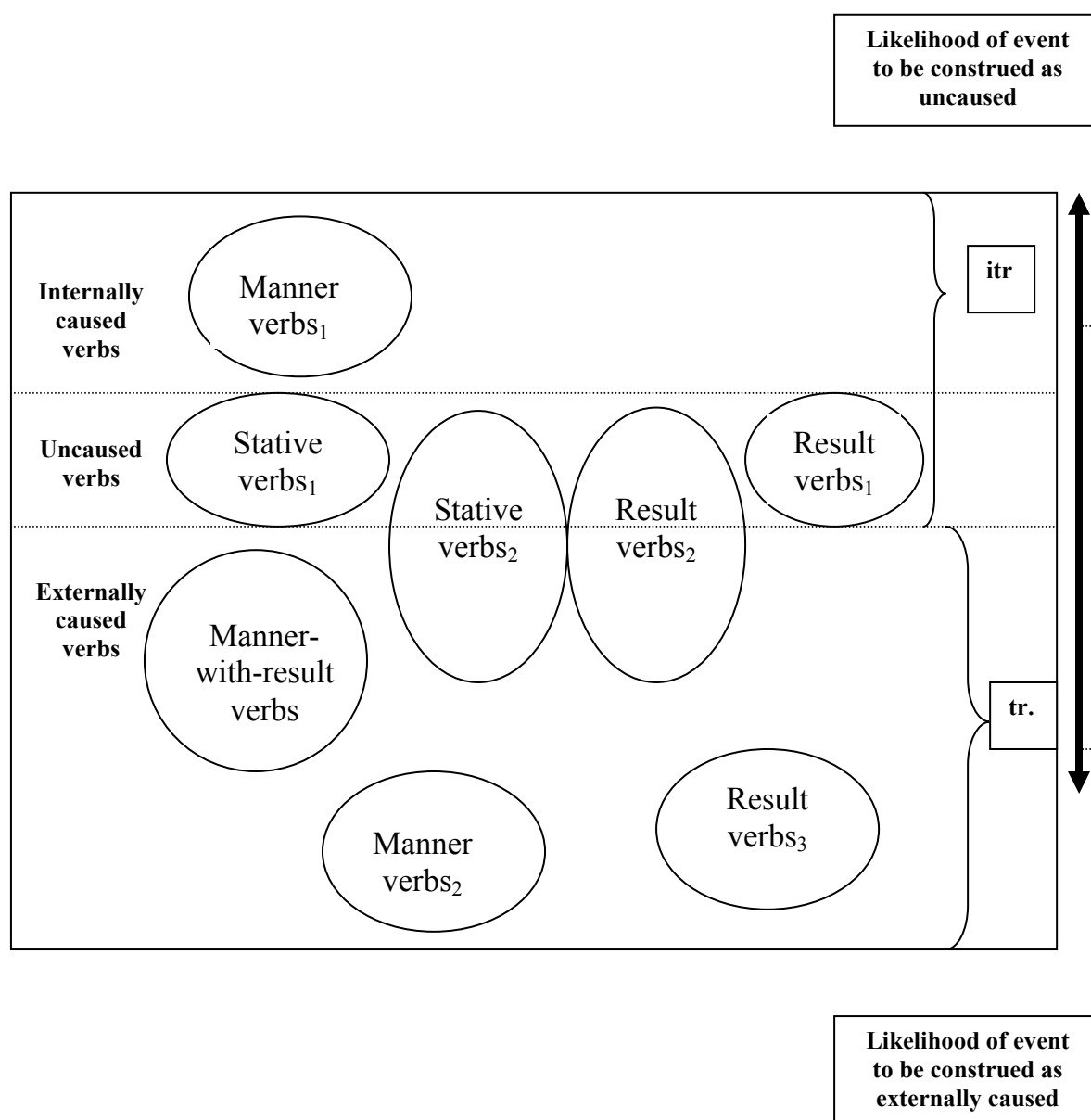
I now turn to show how the Jalonke findings have applications to a number of domains important in cross-linguistic theory and generalization.

a) Causation types

In chapter 1, the notions of ‘internal cause’ vs. ‘external cause’ (Smith 1978, Levin & Rappaport Hovav 1995) were introduced. It was shown that these features partly determine the basic argument structure properties of verbs, but that they cannot account for them entirely. More specifically, it was argued in chapter 3 that not all intransitive verbs denote internally caused events, as claimed by Levin & Rappaport Hovav. Internally caused verbs in Jalonke comprise only a subset of intransitive verbs, namely manner verbs. All manner verbs that are not internally caused in Jalonke are lexicalized as transitive, hence presumably externally caused verbs. In chapter 7, it was argued that internal causation can be tested: internally caused verbs always express indirect causation when combined with the causative marker, since the Causee still has to bring about the caused event through properties inherent to him. For uncaused verbs, in contrast, the causative marker can express both direct and indirect causation. Figure 1 from chapter 6, repeated below as Figure 1, illustrates how temporal event structure classes are distributed over causation types and transitive and intransitive verbs in Jalonke.

CONCLUSION

Figure 1: Temporal event structure classes for intransitive, transitive, and causative/inchoative alternating verbs, their causation types, and the likelihood of the event to be construed as uncaused



b) Likelihood of the event to be construed as uncaused

In order to account for those intransitive verbs that are not internally caused on my account, an additional feature was introduced. This feature, also discussed by Smith (1978) and Haspelmath (1993), is the likelihood of the event denoted by the verb to be construed as uncaused, that is, without an external cause setting it off. This feature is relevant for intransitive verbs of change of state, all of them result

CHAPTER 10

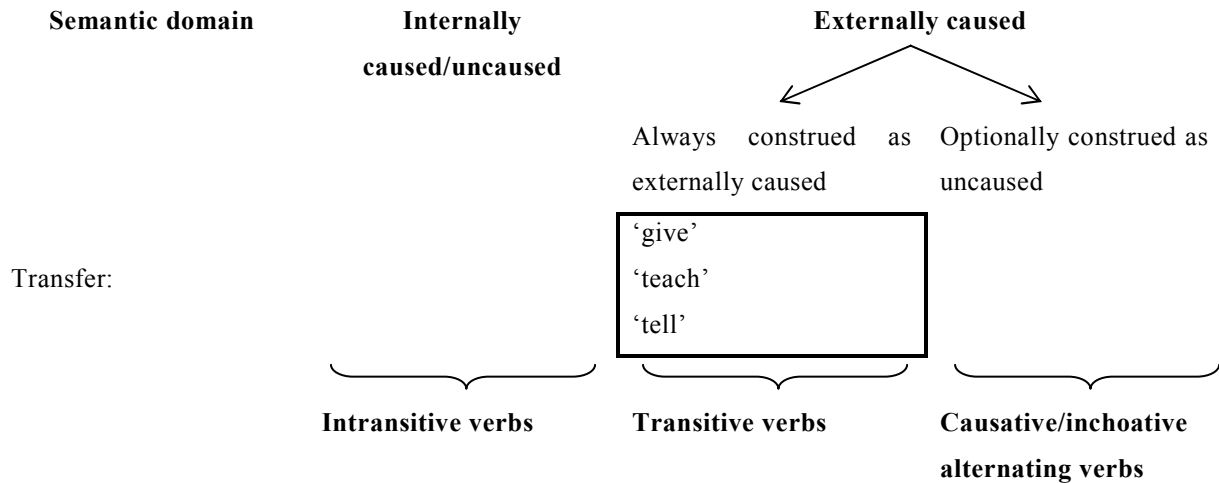
verbs, which I do not analyze as internally caused. More crucially, this feature distinguishes verbs that are exclusively construed as denoting only uncaused or only externally caused events from verbs that can be construed as externally caused but optionally construed as uncaused. The former verbs have an either intransitive or transitive argument structure; the latter, lexicalized in causative/inchoative alternating verbs, allow transitive and intransitive argument structure options. The decreasing vs. increasing likelihood of the event to be construed as uncaused is illustrated in Figure 1 above. It was further argued that the cut-off points between the classes of exclusively uncaused, exclusively externally caused, and optionally uncaused verbs are language-particular. These cut-off points are most likely determined by the inclination of individual languages towards ‘fundamental intransitivity’ vs. ‘fundamental transitivity’ (Nichols 1981, 1982, 1993, Nichols *et al* 1999), that is, by a preference for base transitive or base intransitive lexicalization patterns. True to the fundamentally transitive character of Jalonke, the language has a low cut-off point and lexicalizes many semantic domains in transitive verbs. Especially noteworthy in this regard is the existence of a class of transitive result verbs which violates cross-linguistic expectations for these verbs to occur as intransitive or causative/inchoative alternating, but not exclusively transitive verbs (Haspelmath 1993, Guerssel, Hale, Laughren, Levin & White Eagle 1985, Levin 1993, Levin & Rappaport Hovav 1995). Table 1 illustrates which semantic domains in Jalonke are realized as internally caused, uncaused, externally caused, or occur in several causation types.

CONCLUSION

Table 1: Semantic domains realized as internally caused, uncaused, and externally caused verb in Jalonke

Semantic domain	Internally caused/uncaused	Externally caused	
		Always construed as externally caused	as Optionally construed as uncaused
Bodily processes:	<div>‘laugh’</div> <div>‘burp’</div> <div>‘drowse’</div>		
Emission:	<div>‘weep’</div> <div>‘bark’</div> <div>‘gleam’</div>		
States:	<div>‘be pleasant’</div> <div>‘be round’</div> <div>‘be sick’</div>		
Manner of motion:	<div>‘jump’</div> <div>‘stumble’</div> <div>‘swim’</div>	<div>‘push’</div> <div>‘roll’</div> <div>‘swing’</div>	
Changes of state:	<div>‘be(come) old’</div> <div>‘be(come) smooth’</div> <div>‘be(come) clever’</div>	<div>‘extinguish’</div> <div>‘kill’</div> <div>‘crush’</div>	<div>‘dirty’</div> <div>‘drop’</div> <div>‘transform’</div>
Directed motion:	<div>‘exit’</div> <div>‘leave’</div> <div>‘come’</div>	<div>‘lean against’</div> <div>‘push in’</div> <div>‘pour’</div>	<div>‘sit’</div> <div>‘stand’</div> <div>‘lie’</div>
Manner of contact:		<div>‘slap’</div> <div>‘tickle’</div> <div>‘sting’</div>	
Creation and transformation:		<div>‘create’</div> <div>‘write’</div> <div>‘cook’</div>	
Cognition, emotion and perception:		<div>‘see’</div> <div>‘love’</div> <div>‘know’</div>	

CHAPTER 10



c) Control

The features external cause vs. absence of external cause together with the likelihood of the event to be construed as uncaused were shown to underlie the argument structure classes of intransitive, transitive, and causative/inchoative alternating verbs established in chapters 3-5. In chapter 6, it was demonstrated that a different feature motivates the class of reflexive-only verbs. In accordance with observations made by Klaiman (1991, 1992), but in contrast to Kemmer's (1993) suggestions, this feature was shown to be a positive specification for control. Reflexive-only verbs in Jalonke denote events that are always under their single participant's control, as diagnosed through the compatibility of these verbs with *tewi* 'do deliberately' and their incompatibility with the negated form of *tewi* 'do deliberately'. Although individual verbs of the other argument structure classes can be positively or negatively specified for control, the feature control is not relevant for these classes as a whole.

d) Stage-level vs. individual level properties

A notion introduced by Carlson (1977, 1980) was used in chapters 3 and 5 to explain differences for stative verbs of Jalonke with respect to the admissibility of state-change readings. State change readings for these verbs are manifest in the combination with the perfect, the imperfective, and the *a i* construction referring to the result of a previous state change. It was shown that individual-level properties are correlated with the absence of state change readings, while stage-level properties are correlated with the presence of such readings. It was further argued that the level distinction is not a lexical one, but rather a property of typical referents, and

CONCLUSION

that it therefore is not directly reflected in argument structure properties, as claimed by Levin & Rappaport Hovav (1995).

e) Temporal event structure properties and lexical aspect

In this thesis, an approach to lexical aspect was taken that is based on the assumption that not all aspectual distinctions are lexically encoded. Only the presence vs. absence of dynamicity and of a change of state component is taken to be encoded at the lexical level, as discussed in chapter 1. Other distinctions traditionally seen as lexically anchored, such as durativity vs. punctuality and telicity vs. atelicity, are relegated to the clausal level, since they come about compositionally. That indeed verbs of change of state, regardless of them being telic vs. atelic or punctual vs. durative, exhibit the same event structure properties was demonstrated in chapters 3-6. Table 2 summarizes the aspectual properties for all event structure classes. All verbs except those denoting states receive a past interpretation when unmarked for tense or aspect. States, in contrast, receive a present time interpretation if zero-marked for aspect. All dynamic verbs can occur with the imperfective. If dynamic verbs occur with the imperfective, the event denoted by them is viewed as realized for manner verbs and atelic verbs of change, but not viewed as realized for telic verbs of change, be they result verbs or manner-with-result verbs. If verbs of change or the clauses in which they appear are telic or quantify the degree of change, temporal operators specify the time span up to completion rather than indicating sheer duration.

CHAPTER 10

Table 2: Aspectual properties for all temporal event structure classes determined for Jalonke

	States²	Manner verbs	Result verbs	Manner-with-result verbs
Default aspect test	present	past	past	past
Realization-under-cessation test	n.a.	realized	realized/not realized	realized/not realized
Duration-completion test	n.a.	duration	duration/completion	duration/completion
Degree-of-change test	n.a.	n.a.	completion	completion

f) Corroboration of verb classes through morphosyntactic and morpholexical operations

In chapter 7, it was shown that Ackerman's (1992) and Sadler's and Spencer's (1998) distinction between morphosyntactic and morpholexical operations is applicable to Jalonke. It was demonstrated that the combinatorial possibilities and the meaning changes going hand in hand with morphosyntactic operations are determined by argument structure and causation type. Table 2 from chapter 7, repeated here as Table 3, summarizes the options for the different verb classes in combinations with the causative marker.

² For the state-change readings attested for stative verbs, the results for the tests are the same as for result verbs.

CONCLUSION

Table 3: Overview of basic argument structure, causation types and morpho-syntactic properties of Jalonke verbs

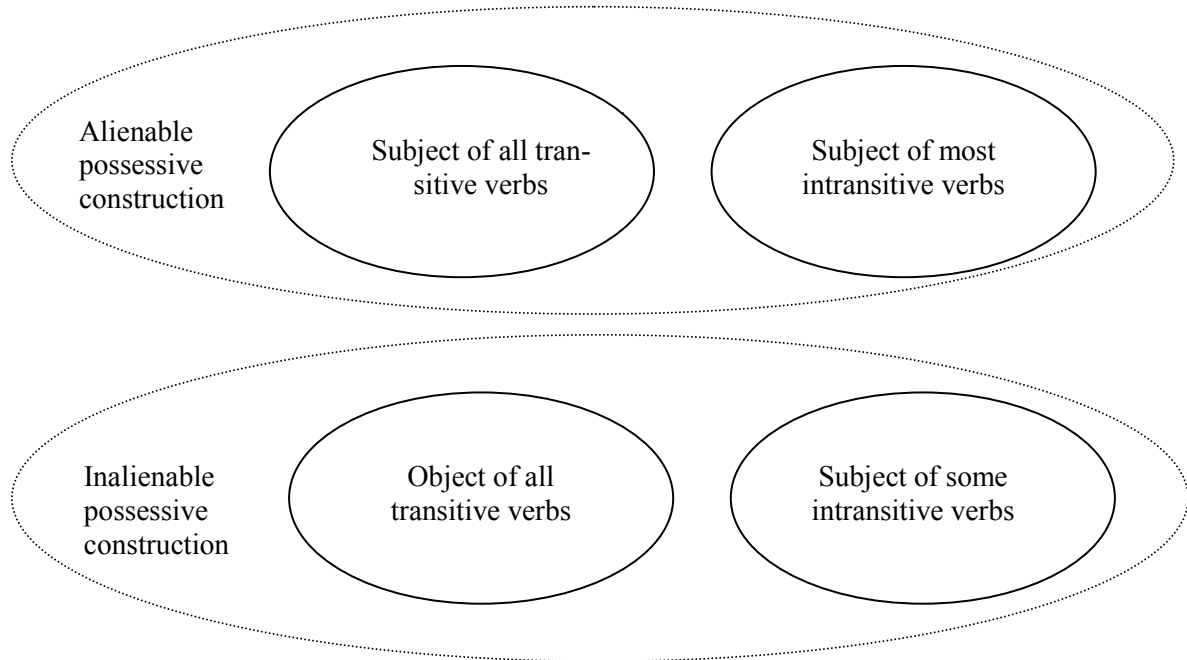
	Intransitive verbs, reflexive-only verbs, and inchoative alternants of causative/inchoative alternating verbs	Transitive verbs and causative alternants of causative/inchoative alternating verbs
Causation type	Internally caused/uncaused	Externally caused
Direct external causation	Only for uncaused verbs through causative derivation	Lexically expressed
Indirect external causation	Causative derivation	Causative derivation
Input of causative derivation	Intransitive/reflexive-only verb	Transitive verb
Output of causative derivation	Transitive verb	Expanded transitive verb

The passive was shown to only occur with transitive verbs, and moreover, to be a marked syntactic option for these verbs. Morpholexical operations were demonstrated to be limited in their scope over verbs – as is true for the unexpressed object and applicative alternations – or to be sensitive to a verb-individual lexical information – as is the case for the distributive and iterative derivations.

g) Unaccusativity

Chapter 8 presented the first account of split intransitivity for a Mande language, although there is evidence for such a split in other Mande languages (cf. Innes 1962, the conflicting evidence on Bambara in Dumestre 1994 vs. Kastenholz 1998). It was argued that this split, although not synchronically productive, can be explained in terms of unaccusativity. In contrast to syntax-based accounts for unaccusativity, the split can be accounted for without assuming differences in base-generated grammatical relations, however. Figure 1 from chapter 8, repeated here as Figure 2, summarizes the split according to the possessive construction selected.

Figure 2: Overview of grammatical relations linked to possessors of alienable and inalienable possessive constructions



h) Reflection of argument structure in discourse

Chapters 3-7 of this thesis were based on the assumption of an information structure specifying the number of arguments with which a given verb appears. In chapter 9, the existence of such a level of lexical argument structure was put to the test. In contrast to what has been predicted for other Mande languages with comparable morphosyntactic properties for verbs, it could be shown that argument structure is an extremely good predictor of the number of syntactically realized arguments of a given verb. In 92.2% of all occurrences, verbs realized exactly the number of predicted arguments. Moreover, all deviating cases could be explained in terms of alternations. These findings call those accounts into question that do not admit any fixed number of arguments for verbs (e.g. Thompson & Hopper 2001), and further asks for a refined typology of languages in terms of projectionist vs. constructionalist, pro-drop or alternation-centered (cf. Bickel 2003, Noonan 2003).

In conclusion, I hope to have shown that detailed investigations of the verb classes of a language of non-Indo-European stock can be quite revealing for central questions in linguistic theorizing. The Jalonke data have demonstrated that languages can present strong evidence for a lexical specification of argument structure. It follows that not all languages need a level of construction to explain argument struc-

CONCLUSION

ture alternations. The features underlying Jalonke verb classes have further shown that there are semantic motivations for major verb classes. These motivations are similar to semantic features attested for English; nevertheless, subtle differences in construal evident in different event and argument structure properties for seeming translation equivalents and unique motivations, such as the feature control underlying the class of reflexive-only verbs in Jalonke, disclose the limits of cross-linguistic resemblances. The data from Jalonke have also demonstrated that the predictability of event and argument structure properties is restricted – we still have to mark lexical exceptions to semantic classes being directly reflected in syntax, and only where grammaticalization processes can be traced, a diachronic explanation of these exceptions is possible. Finally, I hope to have successfully established that a study of the syntax-semantics interface is feasible even in the absence of introspective data based on native-speaker intuitions. In the absence of such data, it was shown that an interplay of qualitative and quantitative methods can expose many of the semantic features underlying syntactic organization. This thesis has therefore made empirical and methodological contributions to the ongoing theoretical discussions in the domain of argument structure, and it is hoped that its findings will inspire further much-needed investigations of verbal argument structure in languages other than Indo-European ones.

10.4. QUESTIONS FOR FURTHER RESEARCH

The findings presented in this thesis raise a number of questions and possible directions of future research.

From a Mande perspective, an assessment of verbal argument structure in other Central Mande languages is considered relevant in order to determine whether the account presented here is valid just for Jalonke or can be extended to other languages of the group. Further, split intransitivity as manifest in the two different possessive constructions in which nominalized intransitive verbs appear would be a worthwhile subject of study, considering the preliminary evidence for this split in two other Mande languages.

From a semantic typological perspective, motion and causality are domains of interest in Mande languages. With respect to the domains of motion and causality, it is of interest to look at the way in which this semantic domain, which exhibits a large variation in argument structure within and across Mande languages, is encoded in different languages of the group. More specifically, it would be desirable to identify syntactically relevant components of meaning that predict which verbs

CHAPTER 10

of the domain will have an intransitive, reflexive-only or transitive basic argument structure, and whether subtle differences in meaning determine the variation across languages and verbs. This topic is considered specifically relevant in view of the fact that in Jalonke, apart from the diachronically object-incorporating verbs of that class, only verbs of change of location, but not verbs of change of state are attested with a reflexive-only argument structure. With respect to the domain of causality, it is worthwhile to explore whether speakers of different Central Mande languages, which have equivalent formal means to express causation, apply the same underlying criteria for the choice of a construction to describe a causal event. Relevant parameters for variation could include the contrast between mediated vs. unmediated causation, the absence vs. presence of a temporal delay between the causing subevent and the resulting state-change, the presence vs. absence of uninterrupted contact between the causer and the affectee, and the ‘force dynamics’ type (Talmy 2000), distinguishing causing from enabling.

From an acquisition perspective, the problems and puzzles that Jalonke verbs pose to children acquiring them are of interest. Of relevance in this regard is the existence of a morphologically unmarked passive resulting in a Theme interpretation of the subject of lexically transitive verbs when used in intransitive clauses. Consequently, the overwhelming majority of transitive verbs have to express their two arguments syntactically in order to receive an active interpretation. It would be relevant to investigate how and at what age Jalonke children acquire this covert voice distinction and the concomitant blocking of the unexpressed object alternation for most verbs.

From a language contact perspective, a comparison of reflexive-only verbs in Fula and Jalonke is a promising area of study. Fula is the contact language for speakers of Jalonke in the Futa Jalon. The investigation of contact phenomena in the domain of argument structure between Fula and Jalonke is considered an interesting domain for future research, because the argument structure class of reflexive-only verbs is attested both in Fula and in Jalonke. Moreover, according to Arnott (1956, 1970), reflexive-only verbs in Fula are positively specified for control, just as in Jalonke.

It is hoped that this concluding chapter has shown that a study of argument structure and argument realization is of interest to different areas of linguistics. Since we know very little about the semantic criteria determining a verb’s membership in a given argument structure class in non-Indo-European languages, more empirical

CONCLUSION

case studies are needed in order to establish the typological profiles of languages with respect to argument structure classes and the relationship between argument structure and argument realization in discourse. It remains to be seen which features of Jalonke are idiosyncratic for the language, and which features are attested across languages.

APPENDICES

Appendix 1: Principal consultants in Saare Kindia with sex, year of birth, relations to other consultants, and languages other than Jalonke spoken

Name	Initials	Sex	Year of Birth	Relation to other consultants	Languages spoken
Mammadou Adama Bary	AB	m	1980	brother of MD, son of AA, cousin of MS	2. French 3. Fula 4. Soso 5. English
Mammadou Alpha Bary	Alpha	m	1976		2. Soso 3. Fula 4. French 5. Maninka 6. English (was exposed to Soso during a prolonged stay in Kindia)
Mammadou Aliou Bary	MAB	m	1957		2. Fula 3. Soso 4. French (was trained in Soso as a teacher)
Souleymane Koubia Bary	SKB	m	1955		2. Fula 3. French Soso (was trained in Fula as a teacher)
Mammadou Saliou Baldé	M.Bala	m	1951	uncle of MK	2. Fula 3. Soso 4. French (was trained in Fula and Soso as a teacher)
Aissatou Bobo Bary	ABB	f	1962		2. Fula 3. Sierra Leone Krio (lived for some years in Sierra Leone)
Mammadou Siré Bary	MS	m	1979	cousin of AB, nephew of AA	2. Fula 3. French 4. Soso

APPENDICES

Name	Initials	Sex	Year of Birth	Relation to other consultants	Languages spoken
Mariama Diallo	M	f	1984	daughter of MK and EH	2. Fula 3. French
Mariama Diallo Bary	MD	f	1989	sister of AB	2. Fula 3. French
Mariama Koummba Bary	MK	f	1982	niece of M.Bala	2. Fula 3. French 4. Soso (a little)
Aissatou Bary	A	f	1977		2. Fula 3. Soso 4. French
Sannou Camara	SC	m	1978		2. Fula 3. French 4. Maninka (travelled a lot in Guinea)
Saikou Bary	SB	m	1978		2. Fula 3. French (a little)
Hawa Xunxuuri Baldé	HX	f	1978		2. Fula

Appendix 2: Materials and responses for the tone comprehension experiments

Experiment 1

0 = no; 1 = yes

Jalonke sentence heard	Intended meaning of Jalonke sentence heard	Listener/ translator	Translation into French = intended meaning	Translation ≠ intended meaning
<i>Jexe nan a ra.</i>	This is a sheep.	AB	0	1
<i>Jexe nan a ra.</i>	This is a fish.	AB	0	1
<i>N jexee sara.</i>	I've bought sheep.	AB	0	1
<i>N jexee sara.</i>	I've bought fish.	AB	1	0
<i>N jexe sara.</i>	I've bought sheep.	AB	1	1
<i>N jexe sara.</i>	I've bought fish.	AB	0	1
<i>N jexe don.</i>	I eat mutton.	AB	0	1
<i>N jexe don.</i>	I eat fish.	AB	1	0
<i>Jexe nan a ra.</i>	This is a sheep.	MAB	0	1
<i>Jexe nan a ra.</i>	This is a fish.	MAB	0	1

APPENDICES

Jalonke sentence heard	Intended meaning of Jalonke sentence heard	Listener/ translator	Translation into French = intended meaning	Translation ≠ intended meaning
<i>N jexɛɛ sara.</i>	I've bought a sheep.	MAB	1	0
<i>N jexɛɛ sara.</i>	I've bought a fish.	MAB	1	0
<i>N jexɛ sara.</i>	I've bought a sheep.	MAB	1	0
<i>N jexɛ sara.</i>	I've bought a fish.	MAB	0	1
<i>N jexɛ don.</i>	I eat mutton.	MAB	0	1
<i>N jexɛ don.</i>	I eat fish.	MAB	1	0
<i>Jexɛ nan a ra.</i>	This is a sheep.	M.Bala	1	0
<i>Jexɛ nan a ra.</i>	This is a fish.	M.Bala	0	1
<i>N jexɛɛ sara.</i>	I've bought a sheep.	M.Bala	1	0
<i>N jexɛɛ sara.</i>	I've bought a fish.	M.Bala	0	1
<i>N jexɛ sara.</i>	I've bought a sheep.	M.Bala	1	0
<i>N jexɛ sara.</i>	I've bought a fish.	M.Bala	0	1
<i>N jexɛ don.</i>	I eat mutton.	M.Bala	1	0
<i>N jexɛ don.</i>	I eat fish.	M.Bala	0	1

Experiment 2

0 = no; 1 = yes

Jalonke sentence heard	Intended meaning of Jalonke sentence heard	Listener/ Translator	Translation = intended meaning	Translation ≠ intended meaning
<i>Xɔri m'aa ra.</i>	This is not a bone.	SKB	1	0
<i>Xɔri nan a ra.</i>	This is a bone.	SKB	1	0
<i>Xɔri nan a ra.</i>	This is a grain.	SKB	0	1
<i>Xɔri m'aa ra.</i>	This is not a grain.	SKB	0	1
<i>N wureɛ sara.</i>	I have bought sweet potato.	SKB	1	0
<i>N wureɛ sara.</i>	I have bought iron.	SKB	0	1
<i>N mun wure sara.</i>	I haven't bought sweet potato.	SKB	1	0
<i>N mun wure sara.</i>	I haven't bought iron.	SKB	0	1
<i>N wureɛ sɔtɔ.</i>	I have found sweet potato.	SKB	1	0

APPENDICES

Jalonke sentence heard	Intended meaning of Jalonke sentence heard	Listener/Translator	Translation = intended meaning	Translation ≠ intended meaning
<i>N wuree soto.</i>	I have found iron.	SKB	0	1
<i>N mun wure soto.</i>	I haven't found sweet potato.	SKB	1	0
<i>N mun wure soto.</i>	I haven't found iron.	SKB	0	1
<i>Wuree fura.</i>	The sweet potato is hot.	SKB	1	0
<i>Wuree fura.</i>	The iron is hot.	SKB	1	0
<i>Wure mun fura.</i>	The sweet potato isn't hot.	SKB	1	0
<i>Wure mun fura.</i>	The iron isn't hot.	SKB	1	0
<i>N a matii.</i>	I accompanied him.	SKB	1	1
<i>N a matii.</i>	I sold it.	SKB	1	1
<i>N m'aa matii.</i>	I didn't accompany him.	SKB	1	1
<i>N m'aa matii.</i>	I didn't sell it.	SKB	1	1
<i>Xori m'aa ra.</i>	This is not a bone.	MAB	1	0
<i>Xori nan a ra.</i>	This is a bone.	MAB	1	0
<i>Xori nan a ra.</i>	This is a grain.	MAB	0	1
<i>Xori m'aa ra.</i>	This is not a grain.	MAB	0	1
<i>N wuree sara.</i>	I have bought sweet potato.	MAB	1	1
<i>N wuree sara.</i>	I have bought iron.	MAB	0	1
<i>N mun wure sara.</i>	I haven't bought sweet potato.	MAB	1	1
<i>N mun wure sara.</i>	I haven't bought iron.	MAB	0	1
<i>N wuree soto.</i>	I have found sweet potato.	MAB	1	0
<i>N wuree soto.</i>	I have found iron.	MAB	0	1
<i>N mun wure soto.</i>	I haven't found sweet potato.	MAB	1	0
<i>N mun wure soto.</i>	I haven't found iron.	MAB	1	1
<i>Wuree fura.</i>	The sweet potato is hot.	MAB	1	0
<i>Wuree fura.</i>	The iron is hot.	MAB	0	1
<i>Wure mun fura.</i>	The sweet potato isn't hot.	MAB	0	1

APPENDICES

Jalonke sentence heard	Intended meaning of Jalonke sentence heard	Listener/Translator	Translation = intended meaning	Translation ≠ intended meaning
<i>Wure mun fura.</i>	The iron isn't hot.	MAB	1	1
<i>N a matii.</i>	I accompanied him.	MAB	1	1
<i>N a matii.</i>	I sold it.	MAB	1	0
<i>N m'aa matii.</i>	I didn't accompany him.	MAB	0	1
<i>N m'aa matii.</i>	I didn't sell it.	MAB	1	0
<i>Xɔri m'aa ra.</i>	This is not a bone.	MD	1	0
<i>Xɔri nan a ra.</i>	This is a bone.	MD	1	0
<i>Xɔri nan a ra.</i>	This is a grain.	MD	0	1
<i>Xɔri m'aa ra.</i>	This is not a grain.	MD	0	1
<i>N wuree sara.</i>	I have bought sweet potato.	MD	1	0
<i>N wuree sara.</i>	I have bought iron.	MD	0	1
<i>N mun wure sara.</i>	I haven't bought sweet potato.	MD	1	0
<i>N mun wure sara.</i>	I haven't bought iron.	MD	0	1
<i>N wuree sɔɔ.</i>	I have found sweet potato.	MD	1	0
<i>N wuree sɔɔ.</i>	I have found iron.	MD	0	1
<i>N mun wure sɔɔ.</i>	I haven't found sweet potato.	MD	1	0
<i>N mun wure sɔɔ.</i>	I haven't found iron.	MD	0	1
<i>Wuree fura.</i>	The sweet potato is hot.	MD	0	1
<i>Wuree fura.</i>	The iron is hot.	MD	1	0
<i>Wure mun fura.</i>	The sweet potato isn't hot.	MD	0	1
<i>Wure mun fura.</i>	The iron isn't hot.	MD	1	0
<i>N a matii.</i>	I accompanied him.	MD	1	0
<i>N a matii.</i>	I sold it.	MD	0	1
<i>N m'aa matii.</i>	I didn't accompany him.	MD	1	0
<i>N m'aa matii.</i>	I didn't sell it.	MD	0	1

APPENDICES

Appendix 3: Frequencies of nominal and verbal uses for the 39 verb types occurring as head of NPs in the sample

Lexeme	Verbal meaning	Verbal frequency in sample	Nominal meaning	Nominal frequency in sample
<i>bɔmbɔ</i>	‘hit’, strike, beat’	37	‘hitting’	1
<i>dɔxɔ</i>	‘sit (down)’	73	‘sitting’	5
<i>dɛɛibaa</i>	‘breakfast’	2	‘breakfast’	1
<i>don</i>	‘eat’	78	‘food’	5
<i>fala</i>	‘speak’	96	‘speech, words’	19
<i>farɛɛ bɔrɔn</i>	‘dance’	1	‘dancing’	1
<i>fɛrɛɲɛnsɛɛ</i>	‘lunch’	5	‘dinner’	3
<i>fori</i>	‘be old’	0	‘old (person)’	7
<i>futi</i>	‘engage to be married’	6	‘part of dowry that is handed over at the engagement’	7
<i>gulɛɛ fala</i>	‘lie’	0	‘liar’	1
<i>gweeli</i>	‘be red’	2	‘red’	1
<i>jɔxɔ</i>	‘pay’	20	‘pay’	5
<i>janfa</i>	‘betray’	2	‘betrayal’	7
<i>kolon</i>	‘know’	137	‘knowing’	1
<i>koogu</i>	‘marry’	11	‘wedding’	28
<i>maa malan</i>	‘assemble (people)’	31	‘assembly (of people)’	1
<i>maa masara</i>	‘exchange people’	2	‘exchange (of people)’	1
<i>matii</i>	‘sell’	8	‘sale’	1
<i>maxorin</i>	‘ask’	19	‘question’	5
<i>mɔɔ</i>	‘be ripe’	4	‘ripening’	1
<i>muga</i>	‘steal’	2	‘theft’	1
<i>nɔxɔ</i>	‘dirty’	0	‘dirt’	1
<i>ɲɛrɛ</i>	‘walk’	9	‘walking’	1
<i>sali</i>	‘pray’	5	‘prayer’	4
<i>samba</i>	‘present’	3	‘present’	1
<i>sara</i>	‘buy’	32	‘price’	1
<i>sɔnɔxɔ</i>	‘cry’	2	‘cry’	1

APPENDICES

Lexeme	Verbal meaning	Verbal frequency in sample	Nominal meaning	Nominal frequency in sample
<i>tagan</i>	‘be tired’	9	‘tiredness’	1
<i>tɔɔɔ</i>	‘suffer’	14	‘suffering’	12
<i>tuu</i>	‘die’	19	‘death’	1
<i>walɛɛ soo</i>	‘work’	13	‘worker’	1
<i>wale</i>	‘work’	21	‘work’	24
<i>wolon</i>	‘be hot’	3	‘heat’	1
<i>xɔnɔ</i>	‘hurt’	18	‘hurt’	1
<i>xɛɛna bii</i>	‘cultivate’	6	‘cultivator’	2
<i>xaran</i>	‘read, learn, study’	32	‘reading, learning, studying’	10
<i>xili</i>	‘name’	17	‘name’	10
<i>xili</i>	‘call’	16	‘call’	1
<i>xutu</i>	‘tie, attach’	0	‘fetish’	2

Appendix 4: Complete list of verbs treated in chapters 3-9 listed according to argument structure and identified subclasses

1. Intransitive verbs

1.1 Intransitive manner verbs

1.1.1 Intransitive verbs of manner of motion

<i>dagalan</i>	‘stumble, trip’
<i>maguu</i>	‘swim’
<i>ɲɛɲɛxun</i>	‘walk with moving hips (of women)’
<i>pintipanta</i>	‘move convulsively, twitch’
<i>pintjipantja</i>	‘splash, paddle’
<i>salatu</i>	‘skid, slip, slide, glide’
<i>senketen</i>	‘limp’
<i>sereseren</i>	‘shudder’
<i>suurun</i>	‘skid, slip, slide, glide’
<i>tugan</i>	‘jump, fly’

APPENDICES

1.1.2 Intransitive verbs of manner of emission

<i>bulubulu</i>	‘ripple, murmur, babble (of water)’
<i>fulan</i>	‘foam, froth, drool’
<i>furufurun</i>	‘rustle (of cloth, of the wings of birds)’
<i>gəŋgəŋ</i>	‘bark’
<i>gwelengwelen</i>	‘speak loudly’
<i>jambalin</i>	‘shine, glow (of moon, stars, spotlights and light bulbs)’
<i>jilen</i>	‘gleam, glitter, glisten (of metals, mirrors, glass)’
<i>mbeembēē</i>	‘bleat (of sheep, goats)’
<i>naxa</i>	‘say’
<i>naumnaum</i>	‘meow (of cats)’
<i>ŋurundun</i>	‘growl, grunt (of dogs)’
<i>ŋəŋəŋəŋ</i>	‘buzz, hum (of insects)’
<i>putuputu</i>	‘roar (of motorbikes and other motorized machines)’
<i>səŋxə</i>	‘shout, scream’
<i>suisui</i>	‘squeak (of bats, mice, rats)’
<i>tēlutēlu</i>	‘chatter, prattle, babble (of humans and certain birds)’
<i>tasaintasain</i>	‘gush (out), bubble’
<i>waa</i>	‘weep, cry (of humans and animals)’
<i>xəŋxəŋ</i>	‘croak (of frogs, toads)’
<i>xəjəxə</i>	‘rumble (of stomach and throat if somebody is famished)’
<i>xəsəlin</i>	‘shriek, screech (of humans and certain birds)’
<i>xiixəŋ</i>	‘creak, squeak (of doors)’
<i>xuruxan</i>	‘snore’

1.1.3 Intransitive verbs of bodily processes

<i>dexun</i>	‘hiccup, burp’
<i>jele</i>	‘laugh’
<i>jengi</i>	‘breathe’
<i>kaakun</i>	‘yawn’
<i>karandi</i>	‘belch’
<i>məŋsi</i>	‘smile’

APPENDICES

<i>tɔxun</i>	‘cough’
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1.1.4 Other intransitive manner verbs

<i>kinsan</i>	‘drowse’
<i>wale</i>	‘work’
<i>xii</i>	‘sleep’
<i>xiijesaa</i>	‘dream’

1.2 Intransitive result verbs

1.2.1 Intransitive verbs of inherently directed motion

<i>dangu</i>	‘pass, overtake’
<i>faa</i>	‘come’
<i>fɛnfɛn</i>	‘fall flat on one’s face’
<i>giri</i>	‘cross, pass’
<i>goro</i>	‘descend’
<i>keli</i>	‘get up, leave’
<i>mini</i>	‘exit’
<i>sigā</i>	‘go’
<i>talū</i>	‘come (honorific)’
<i>tee</i>	‘ascend’

1.2.2 Other intransitive result verbs

<i>baa</i>	‘conclude’
<i>bolo</i>	‘leave, let go, leave in peace’
<i>bori ra</i>	‘taste’
<i>bula</i>	‘burst, explode’
<i>duba</i>	‘bless’
<i>gaji ma/ra</i>	‘finish’
<i>guruntun</i>	‘start, quiver, wince’
<i>janfa</i>	‘improve, progress’
<i>kamali</i>	‘become complete’
<i>kurun</i>	‘leave early’
<i>kutin</i>	‘bore into, pierce into’
<i>laa ra</i>	‘trust’
<i>lan</i>	‘meet, agree’
<i>muti</i>	‘disappear’

APPENDICES

<i>naxa</i>	‘say’
<i>neemu ma/ra</i>	‘forget’
<i>sonto</i>	‘disappear’
<i>see</i>	‘ripen, grow, mature’
<i>ton</i>	‘guess’
<i>tantan</i>	‘make a mistake, commit an error’
<i>taxun</i>	‘separate, leave each other’
<i>tin ma/ra</i>	‘accept, agree’
<i>tondi ma/ra</i>	‘refuse’
<i>tuu</i>	‘die’
<i>xara ma</i>	‘perceive, notice’
<i>xuben</i>	‘go out, go dark, die’
<i>xunu</i>	‘wake up’

1.3 Intransitive stative verbs

<i>bora</i>	‘be moldy, rotten’
<i>bora xu</i>	‘be easy, soft’
<i>bemben</i>	‘be fat’
<i>bexi</i>	‘be bitter’
<i>bigi</i>	‘be short, small’
<i>binja</i>	‘be heavy’
<i>bundaa</i>	‘be wet’
<i>buu</i>	‘last; take a long time’
<i>daxu</i>	‘be stupid’
<i>dolin</i>	‘be bent, clumsy, wrong’
<i>fan</i>	‘be pleasant, nice’
<i>fata</i>	‘be diligent, slow’
<i>felen</i>	‘be bent’
<i>fisa</i>	‘be better, surpass’
<i>fori</i>	‘be old’
<i>fura</i>	‘be sick’
<i>furikan</i>	‘be pregnant’
<i>furu</i>	‘be pregnant’
<i>gondon</i>	‘be slim, skinny’
<i>gaaxu jaara/xon</i>	‘be afraid’
<i>goo</i>	‘be plenty, abundant’
<i>gundu</i>	‘be round’

APPENDICES

<i>gweeli</i>	‘be red’
<i>jaagi ra/xən</i>	‘be ashamed’
<i>jaaixara</i>	‘be coldblooded’
<i>jafun</i>	‘be crazy, mad’
<i>jentunu</i>	‘be absentminded, distracted’
<i>jonjon</i>	‘be homeless’
<i>kaaba</i>	‘be dumbfounded, astonished’
<i>keɲe</i>	‘be in a hurry’
<i>kɔɔtaa</i>	‘be clever, bright’
<i>kuuja</i>	‘be tall, long’
<i>kwisan</i>	‘be astonished’
<i>lan</i>	‘be good, nice, good-looking’
<i>lontin</i>	‘be slow at’
<i>luga</i>	‘be full, replete’
<i>mɔɔ</i>	‘be ripe’
<i>ma-furaa</i>	‘be quick’ (DISTR-only)
<i>ma-gaaxu</i>	‘be frightening (lit.: DISTR-be afraid)’
<i>ma-gundugulun</i>	‘be round’ (DISTR only)
<i>ma-kinikini</i>	‘inspire pity’ (DISTR only)
<i>man</i>	‘be able, capable’
<i>maxa</i>	‘be far’
<i>melun</i>	‘be sharp, pointed’
<i>muluxun</i>	‘be sour, acid’
<i>naaxu</i>	‘be nasty, malicious, mean’
<i>naxan be</i>	‘be happy, pleased’
<i>naxun</i>	‘be sweet, nice, pleasant, tasty’
<i>nɛxin ra</i>	‘detest, hate’
<i>nɛxun</i>	‘be smooth, reserved, soft’
<i>nɪɲe</i>	‘be in good health’
<i>ra-fan ma</i>	‘be agreeable, pleasant (lit.: CAUS-be pleasant)’
<i>selexu</i>	‘be smooth, slippery’
<i>sonti</i>	‘be left over (of goods, unmarried women)’
<i>suusi ra</i>	‘bear, stand, resist’
<i>tagan</i>	‘be tired’
<i>tinxin</i>	‘be straight, honest’
<i>wolon</i>	‘be hot’
<i>wolon</i>	‘be fast (at)’

APPENDICES

<i>xənə</i>	‘be bitter’
<i>xərəxə</i>	‘be hard, difficult’
<i>xəxə</i>	‘be fat’
<i>xaqjε</i>	‘be ferocious’
<i>xajjan</i>	‘be sharp, pointed’
<i>xara</i>	‘be dry’
<i>ximbeli</i>	‘be cold’
<i>xulun</i>	‘be fast (at)’
<i>xungoo</i>	‘be big, fat’
<i>xunu</i>	‘be clever’
<i>xuurun</i>	‘be small, short’

1.4 Intransitive phasal verbs

<i>gaji</i>	‘end, finish’
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2. Transitive verbs

2.1 Transitive manner verbs

2.1.1 Transitive verbs of manner of motion

<i>bendun</i>	‘pull’
<i>bindixilin</i>	‘roll’
<i>buubu</i>	‘drag’
<i>fintan</i>	‘fan’
<i>firifiri</i>	‘turn around, rotate, spin’
<i>jigijan</i>	‘shake’
<i>lintan</i>	‘swing’
<i>woli</i>	‘throw’

APPENDICES

2.1.2 Transitive verbs of manner of contact

<i>bombɔ</i>	‘hit, strike, beat’
<i>balon</i>	‘kick’
<i>bɔrɔn</i>	‘make twisting and stomping movements with feet in order to separate grains from the stalk’
<i>bula</i>	‘slap’
<i>bun</i>	‘sting, shoot, fire’
<i>dɛxun</i>	‘strangle, choke’
<i>deten</i>	‘lean on, press on’
<i>din</i>	‘pound, punch’
<i>dontin</i>	‘pinch, nip’
<i>furugu</i>	‘twirl’
<i>gɔnɔ</i>	‘hit, knock against’
<i>garin</i>	‘hit, strike’
<i>itala</i>	‘whip, flog’
<i>kili</i>	‘tickle’
<i>ma-fitan</i>	‘sweep’ (DISTR only)
<i>maxa</i>	‘touch’
<i>sumbu</i>	‘kiss’
<i>turuxun</i>	‘rub’
<i>xɔrɛidin</i>	‘push’
<i>xɔrɔ</i>	‘scratch’
<i>xin</i>	‘bite, crunch’
<i>xusin</i>	‘flog, whip’

2.2 Transitive manner + result verbs

<i>a xirɛɛ mɛɛ</i>	‘smell (lit.: 3SG smell-DEF hear)’
<i>baa</i>	‘extract, draw (water)’
<i>baari</i>	‘circumcise’
<i>balan</i>	‘lock (in)’
<i>bamba</i>	‘put on one’s back (small children)’
<i>bamban</i>	‘push in’
<i>bana</i>	‘castrate (with special scissors, knife)’
<i>banxɛɛ saa</i>	‘thatch a roof (lit: lie the house)’
<i>banxɛɛ tii</i>	‘build a house (lit.: stand the house)’
<i>barabara</i>	‘boil’

APPENDICES

<i>bari</i>	‘give birth to’
<i>bepi</i>	‘divorce, release’
<i>bii</i>	‘cultivate (field, with hoe); cut (hair and straw, with scissors or razor)’
<i>bilin</i>	‘tie around, encircle’
<i>biri</i>	‘bury, dig in (animals and inanimate objects)’
<i>bolon</i>	‘untie, unfasten (with hands), pick (fruit, with hands or fruitpicker), separate, split (with any suitable instrument)’
<i>bootin</i>	‘pull out, draw out’
<i>bɔni</i>	‘glue, paste, stick’
<i>bɔɔ</i>	‘tear’
<i>bɔxun</i>	‘spit, vomit’
<i>bumbaa i</i>	‘waste, lavish (money)’
<i>bundu</i>	‘milk’
<i>bura</i>	‘skin’
<i>burundun</i>	‘pour’
<i>daa</i>	‘create’
<i>danxun</i>	‘support, look after’
<i>dege</i>	‘sew’
<i>dexun</i>	‘strangle, choke, throttle’
<i>dogoti</i>	‘cut (cloth or rope, with knife or scissors); pick (fruit, with hands or knife)’
<i>don</i>	‘eat’
<i>donko</i>	‘glue, paste, stick’
<i>dula</i>	‘soak, plunge, wet’
<i>dundu</i>	‘cork, block, clog’
<i>dunxun</i>	‘suck’
<i>falaa tii</i>	‘speak (lit.: speak-DEF stand)’
<i>fareɛ bɔrɔn</i>	‘dance (lit.: body-DEF twist)’
<i>fee</i>	‘blow, blow up’
<i>feelun</i>	‘blow into, blow up’
<i>fejen</i>	‘search, look for’
<i>fen</i>	‘search, look for’
<i>fulun</i>	‘untie, unfasten, undo’
<i>funsufansa</i>	‘waste, lavish (of money)’
<i>futi</i>	‘engage to be married (by paying the dowry)’

APPENDICES

<i>futu</i>	‘swell, blow up’
<i>fuu</i>	‘excrete’
<i>gan</i>	‘burn, grill’
<i>gata</i>	‘keep, store’
<i>gee</i>	‘dig out (tubers)’
<i>gerun</i>	‘swallow’
<i>gilin</i>	‘fry’
<i>guran</i>	‘pull out, weed’
<i>guugaa</i>	‘rasp, grind (with rasp, grinder)’
<i>i</i>	‘say’
<i>i-bɔɔ</i>	‘tear, slit (cloth, rope, with hands or scissors), split, cut along the long axis (with knife, axe, machete) (lit.: IT-tear)’
<i>i-dogoti</i>	‘cut in half, cut in two pieces (with knife, scissors or hands) (lit.: IT-cut)’
<i>i-saxun</i>	‘mix (lit.: IT-mix)’
<i>i-sege</i>	‘chop, cut in sections (with knife, axe, machete) (lit.: IT-cut)’
<i>i-xaba</i>	‘saw, cut into sections (with saw, knife) (lit.: IT-cut)’
<i>jɔlɔxɔ</i>	‘chain (up)’
<i>jɔxɔ</i>	‘pay somebody’
<i>jaaibaa</i>	‘spread out, arrange’
<i>jaailan</i>	‘arrange, repair’
<i>jaatagilan</i>	‘bring into line, arrange, solve’
<i>janfa</i>	‘betray, deceive’
<i>jatin</i>	‘dig’
<i>jebu</i>	‘heal’
<i>jegejege</i>	‘choose, pick’
<i>jogon</i>	‘put into water, soak’
<i>kɔɔ</i>	‘take a handful of cereals’
<i>kɔn</i>	‘lick (liquids and honey)’
<i>kejen</i>	‘sow (small grains, in throwing movements)’
<i>keri</i>	‘hunt, chase’
<i>kiina (ma)dɔxɔ</i>	‘tell a story (lit.: story-DEF DISTR-sit (down))’
<i>kiran</i>	‘lean against’
<i>kolon</i>	‘know’

APPENDICES

<i>kombu</i>	‘insult’
<i>koogu</i>	‘marry’
<i>kumba</i>	‘flatten, iron’
<i>kwɛn</i>	‘hunt (animals)’
<i>kweren</i>	‘take off, remove (clothes)’
<i>lii</i>	‘find’
<i>ma-bɔɔ</i>	‘peel (with hands)’
<i>ma-kafu</i>	‘increase (lit.: DISTR-add)’
<i>ma-lan</i>	‘assemble (lit.: DISTR-meet)’
<i>ma-nɛxin</i>	‘hate (lit.: DISTR-hate)’
<i>ma-nin</i>	‘frighten, scare (DISTR only)’
<i>ma-dɔxɔ</i>	‘cook (in water) (lit.: DISTR-sit (down))’
<i>ma-duku</i>	‘cover, shelter’ (DISTR only)
<i>ma-gengun</i>	‘spy on (DISTR-only)’
<i>ma-keri</i>	‘pursue (lit.: DISTR-hunt)’
<i>makiyaasna saa</i>	‘put on makeup’
<i>ma-luxun</i>	‘bury (human beings) (lit.: DISTR-hide)’
<i>ma-mɛɛ</i>	‘wait for (lit.: DISTR-hear)’
<i>ma-sɔtɔ</i>	‘obtain, get (DISTR-find)’
<i>ma-tii</i>	‘accompany (lit.: DISTR-stand (up))’
<i>ma-too</i>	‘watch (lit.: DISTR-see)’
<i>ma-xaba</i>	‘peel (with knife) (lit.: DISTR-cut)’
<i>mɛɛ</i>	‘hear’
<i>min</i>	‘drink’
<i>mugan</i>	‘be composed, find consolation’
<i>nin</i>	‘cook (food)’
<i>jinnɛe malugan</i>	‘brush teeth’
<i>pootopaata</i>	‘eat much and leave the rest; meddle with food’
<i>ra-bɔɔ</i>	‘cut open, tear open, operate (with knife, surgical instrument) (lit.: CAUS-tear)’
<i>ra-bootin</i>	‘pull out (of plants) (lit.: CAUS-pull out)’
<i>ra-fala</i>	‘repair, prepare (CAUS-speak)’
<i>ra-fee</i>	‘fill (lit.: CAUS-blow)’
<i>ra-gata</i>	‘bury (human beings) (lit.: CAUS-store)’
<i>ra-kɔɔ</i>	‘take out of the sun (lit.: CAUS-take a handful)’
<i>ra-kɔn</i>	‘lick clean (lit.: CAUS-lick)’
<i>ra-lee</i>	‘spread out’ (CAUS only)

APPENDICES

<i>ra-maxa</i>	‘shake (lit.: CAUS-be far)’
<i>ra-mɛɛ</i>	‘listen (lit.: CAUS-hear)’
<i>ra-min</i>	‘water (lit.: CAUS-drink)’
<i>ra-mupuxun</i>	‘shell (nuts) (lit.: CAUS-crush)’
<i>ra-xaba</i>	‘prune, trim (with knife, machete, sickle (lit.: CAUS-cut))’
<i>ra-xutu</i>	‘surprise (lit.: CAUS-tie)’
<i>sabaana soo</i>	‘play (lit.: play-DEF enter)’
<i>sali</i>	‘pray’
<i>saxun</i>	‘mix’
<i>sɛbɛ</i>	‘write’
<i>sɛgɛ</i>	‘cut in one stroke (with knife, axe, machete, knife), fell (tree) (with axe, machete)’
<i>sigɛɛ saa</i>	‘sing (lit.: song-DEF lie (down))’
<i>sii</i>	‘sow (big grains, put into the earth one after the other)’
<i>sindon</i>	‘hang’
<i>solo</i>	‘carve, sculpt (with special knife)’
<i>sooti</i>	‘thread, pierce’
<i>sɔtɔ</i>	‘find’
<i>sɔxɔ</i>	‘pierce, weave, crochet’
<i>suxu</i>	‘seize’
<i>tala</i>	‘collect (honey)’
<i>tibi</i>	‘plant’
<i>tongo</i>	‘take (from/at a place)’
<i>too</i>	‘see’
<i>tumba</i>	‘pierce, perforate’
<i>tureɛ saa</i>	‘put on cream (lit.: oil-DEF lie (down))’
<i>wɔjɛ</i>	‘shell (nuts), peel (corn)’
<i>xaranna tii</i>	‘teach (lit.: learn-DEF stand)’
<i>xaa</i>	‘wash’
<i>xaba</i>	‘cut in several sawing strokes (with knife, saw, scissors, for crops with sickle)’
<i>xandaa soo</i>	‘build a fence (lit.: fence-DEF enter)’
<i>xaran</i>	‘read, learn, study’
<i>xɛɛrixɛɛri</i>	‘shred (with hands)’
<i>xili</i>	‘call’

APPENDICES

<i>xili</i>	‘name, baptize’
<i>xiri</i>	‘tie, fasten’
<i>xolombon</i>	‘put a long piece of wood around an animal’s neck in order to hinder it to trespass fences’
<i>xɔn</i>	‘love’
<i>xɔnfejen</i>	‘search, look for’
<i>xɔntɔn</i>	‘greet’
<i>xɔrɔ</i>	‘take a handful’
<i>xubutan</i>	‘plow, churn up’
<i>xunna bii</i>	‘shave the head (lit.: head-DEF cut)’
<i>xunna dɛmbɛ</i>	‘tress (lit.: head-DEF plait)’
<i>xuɲibaa</i>	‘expose (lit.: head-IT-extract)’
<i>xutu</i>	‘tie (up, around), fasten, attach a fetish’

2.3 Transitive result verbs

2.3.1 Transitive verbs of inherently directed motion

<i>i-tee</i>	‘lift, raise (lit.: IT-ascend)’
<i>ma-goro</i>	‘lower (lit.: DISTR-descend)’
<i>ma-kɔrɛɛ</i>	‘approach’ (DISTR only)
<i>ma-mini</i>	‘move out of, move away from (lit.: DISTR-exit)’
<i>ma-siga</i>	‘move away from (lit.: DISTR-go)’

2.3.2 Transitive break verbs

<i>gerensen</i>	‘scatter, shatter, smash’
<i>ma-koto</i>	‘close (DISTR only)’
<i>muɲuxun</i>	‘crush, smash’
<i>wuru</i>	‘break, crack’

APPENDICES

2.3.3 Other transitive result verbs

<i>faxa</i>	‘kill’
<i>ra-baa</i>	‘do, make (CAUS-extract)’
<i>niga</i>	‘do, make’

2.4 Transitive verbs with optionally three participants

2.4.1 Direct strategy-only verbs

<i>fala be</i>	‘tell, speak to, say to’
<i>fii ma</i>	‘give to’
<i>jaabaa be</i>	‘explain to/for’
<i>jita ra</i>	‘show to’
<i>luxun ma</i>	‘hide from’
<i>ma-tii xən/ ma</i>	‘sell to (lit.: DISTR-stand (up))’
<i>sara ma</i>	‘buy from’
<i>summun be</i>	‘chat to’
<i>xεε ma/ra/xən/i</i>	‘send, commission’
<i>xani ma/ra/xən/i</i>	‘send’

2.4.2 Secondary strategy-only verbs

<i>kanta ma</i>	‘protect from, save from’
<i>kisi ma</i>	‘protect from, save from’
<i>niga ma</i>	‘learn to, teach to’
<i>ra-sii ma</i>	‘advise, counsel (lit.: CAUS-sow)’

2.4.3 Instrument strategy-only verbs

<i>kii ra</i>	‘present with, bestow with’
<i>ra-tuu ra</i>	‘remind of (lit.: CAUS-die)’
<i>samba ra</i>	‘present with (after displacement of giver)’

APPENDICES

2.4.4 Verbs occurring with two different strategies

2.4.4.1 Direct and secondary strategy

<i>doni ma</i>	‘lend, borrow (money)’
<i>kɔjekɔje be/ma</i>	‘whisper’
<i>ma-kula ma</i>	‘beg’ (DISTR only)
<i>ma-xorin ma</i>	‘ask’ (DISTR only)
<i>muga ma</i>	‘steal’
<i>roni ma</i>	‘inherit’

2.4.4.2 Direct and instrument strategy

<i>nefu ma/ra</i>	‘borrow, lend’
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2.4.4.3 Secondary and instrument strategy

<i>tɔɔnin ma/ra</i>	‘accuse’
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3 Causative/inchoative verbs

3.1 Causative/inchoative verbs with intransitive stative readings

<i>fiixe</i>	‘be white, clean’
<i>fɔɔrɔ</i>	‘be black’
<i>fura</i>	‘be hot’
<i>tilin</i>	‘be deep’
<i>xɔnɔ</i>	‘hurt’

3.2 Causative/inchoative result verbs

<i>bira</i>	‘fall’
<i>dali</i>	‘get used’
<i>dɔxɔ</i>	‘sit (down)’
<i>findi</i>	‘transform’
<i>fɔlɔ</i>	‘start, begin’
<i>gira</i>	‘break, crush’
<i>kafu</i>	‘add, associate’
<i>lɔɔ</i>	‘melt’
<i>luu</i>	‘cease, stop, stay, remain’
<i>nɔxɔ</i>	‘dirty’

APPENDICES

<i>ɲɛn</i>	‘end, stop’
<i>ra-bii</i>	‘open (lit.: CAUS-cut)’
<i>saa</i>	‘lie (down)’
<i>sindon</i>	‘hang (up)’
<i>soo</i>	‘enter’
<i>sɔrɔn</i>	‘fall (from a considerable height)’
<i>tɔɔrɔ</i>	‘suffer’
<i>tii</i>	‘stand (up)’

4 Reflexive-only verbs

4.1 Reflexive-only verbs of manner of motion

<i>gii</i>	‘run’
<i>ibɛndun</i>	‘stretch (lit.: IT-pull)’
<i>ma-furaa</i>	‘hurry’ (DISTR only)’
<i>ɲɛɛ</i>	‘walk’
<i>sengisengi</i>	‘tiptoe’
<i>singesinge</i>	‘make a race’
<i>xulun</i>	‘hurry’

4.2 Reflexive-only verbs of inherently directed motion

<i>gulen</i>	‘return’
<i>sɔnsɔnkɔli</i>	‘squat, crouch’
<i>tala</i>	‘escape’
<i>telen</i>	‘turn towards, direct’
<i>xɛɛ</i>	‘return’
<i>ximbisin</i>	‘kneel (lit.: knee-?)’

APPENDICES

4.3 Reflexive-only verbs of ingesting

<i>fɛrɛɲɛnsɛɛ</i>	‘lunch (lit.: afternoon-thing)’
<i>dɛɛgɛ</i>	‘snack (lit.: mouth-?)’
<i>dɛɛibaa</i>	‘breakfast (lit.: mouth-IT-extract)’
<i>kɔʝɛbaa</i>	‘breakfast (lit.: ?-extract)’
<i>xiisee</i>	‘dine (lit.: sleep-thing/ripen)’

4.4 Reflexive-only verbs of cognition, emotion and perception

<i>jaaxani</i>	‘perceive (lit.: eye-send)’
<i>ma-naxun</i>	‘think of (lit.: DISTR-be sweet)’
<i>tulitii</i>	‘prick (up) one’s ears (lit.: ear-stand)’
<i>xara i</i>	‘be silent, patient’

<i>tewi</i>	‘do deliberately’
<i>jungu</i>	‘say good-bye’

Appendix 5: Overall structure of the sample used in chapter 9, broken down by genres in table 1, and by speaker in table 2

Table 1: Overall structure of the sample, broken down by genres, texts and speakers with number of predications

* after number of predications = not whole text included

after number of predications - not whole text included				
Genre	Text No.	Topic	Speakers	Number of predications
conversation	1	Varied	AB	105
			Alpha	253
			A	59
			Abdou	88
			Dian	89
			Assi	4
			Bouba	3
			MCR	3
			Total text	

APPENDICES

Genre	Text No.	Topic	Speakers	Number of pre- dications
	18	Women comment on a crocheting lesson given by one of the participants.	ABB AK A anonymous 2 TH AO Mai K	6 6 99 1 36 28 84 1
			Total text	261
	19	Death in a nearby village; varied	MD ABB AK HD HB EH anonymous 2 TH AO Mai K L	22 68 194 6 115 21 22 4 2 1 33 24
			Total text	512
	Total genre			1377
historical narrative	2	How the Jalonke settled in Saare Kindia	TMS	150
			Total text	150
	6	About the earthquake in Guinea in 1984	M.Bala AB	199 16
			Total text	215*
	24	About the medical reasons for the scars on the narrator's temples	EHM AB	45 16
			Total text	61
	Total genre			426
personal	3	About seasonal work in neighboring	AA	223

APPENDICES

Genre	Text No.	Topic	Speakers	Number of pre- dications
narrative		countries in the youth of the narrator	Total text	223*
	7	About a journey the narrator undertook	AB	165
			Dian	10
			Total text	175
	15	About a meeting the day before to which the narrator went	MAB	150
			Total text	150
	16	About how the holiday the following day is going to be celebrated	AK	93
			MAB	14
			Total text	107
	20	About marriage procedures and weddings the narrator experienced in the village	ABB	285
			Alpha	114
			AB	102
			Total text	501*
	21	About the two main narrators' trip to the next town in order to go to the dentist	MD	182
			HD	122
			AK	15
			MSC	50
			anony	3
			mous 1	2
			MCR	
			Total text	374
	22	About the narrator's teacher career and a seminar he attended	SKB	367
			AB	34
			Total text	401*
	23	About the narrator's pilgrimage to Mecca	EHM	183
			AB	15
			Total text	198

APPENDICES

Genre	Text No.	Topic	Speakers	Number of pre-dications
	27	About the narrator’s forced labor under the French	EH	275
			AB	2
			Total text	277
	Total genre			2406
story	4	Story about the orphan and the beast	AK	282
			MD	4
			Total text	286
	5	Story about the rabbit and the beans	Agi	153
			Total text	153
	8	Why the chimpanzee has no house	AB	49
			Abdou	3
			EH	1
	Total text	53		
	9	Why the chimpanzee has no tail	AB	33
			Total text	33
	10	Why the chimpanzee has a red bottom	AB	58
			Abdou	3
			EH	1
	Total text	62		
	Total genre			587
letter	11	Varied	AB	89
			Total text	89
	12	Varied	AB	87
			Total text	87
	Total genre			176
action description	13	Life commentary of a soccer game	Abdou	161
			Total text	161*

APPENDICES

Genre	Text No.	Topic	Speakers		Number of pre- dications
	14	Online description of a video showing village women doing laundry at the river	MAB		152
			Total text		152
	17	Online description of a video showing village women working in an onion field	M.Bala		153
			Total text		153
	Total genre				466
play	25	About the importance of health care	collecti ve		314
			Total text		314
	Total genre				314
speech	26	On the occasion of the inauguration of a health post	Alpha		54
			Total text		54
	Total genre				54
Grand total					5806

Table 2: Number of predications per speaker, broken down into texts and genres

Speaker	Text No.	Genre of text	Number of predications
AB	1	conversation	105
	6	historical narrative	16
	7	personal narrative	165
	8	story	49
	9	story	33
	10	story	58
	11	letter	89
	12	letter	87
	20	personal narrative	102
	22	personal narrative	34
	23	personal narrative	15
	24	historical narrative	16
	27	personal narrative	2

APPENDICES

Speaker	Text No.	Genre of text	Number of predications
	Total speaker		771
AK	4	story	282
	16	personal narrative	93
	18	conversation	6
	19	conversation	194
	21	personal narrative	15
	Total speaker		590
Alpha	1	conversation	253
	20	personal narrative	114
	26	speech	54
	Total speaker		421
SKB	22	personal narrative	367
	Total speaker		367
ABB	18	conversation	6
	19	conversation	68
	20	personal narrative	285
	Total speaker		359
M.Bala	6	historical narrative	199
	17	action description	153
	Total speaker		352
MAB	14	action description	152
	15	action description	150
	16	personal narrative	14
	Total speaker		316
collective	25	play	314
	Total speaker		314
EH	8	personal narrative	1
	10	story	1
	19	conversation	21
	27	personal narrative	275
	Total speaker		298
Abdou	1	conversation	88
	8	personal narrative	3
	10	story	3
	13	action description	161

APPENDICES

Speaker	Text No.	Genre of text	Number of predications
	Total speaker		255
EHM	23	personal narrative	183
	24	personal narrative	45
	Total speaker		228
AA	3	personal narrative	223
	Total speaker		223
MD	4	story	4
	19	conversation	22
	21	personal narrative	182
	Total speaker		208
A	1	conversation	59
	18	conversation	99
	Total speaker		158
Agi	5	story	153
	Total speaker		153
TMS	2	historical narrative	150
	Total speaker		150
HD	19	conversation	6
	21	personal narrative	122
	Total speaker		128
HB	19	conversation	115
	Total speaker		115
Dian	1	conversation	89
	7	personal narrative	10
	Total speaker		99
Mai	18	conversation	84
	19	conversation	1
	Total speaker		85
MSC	21	personal narrative	50
	Total speaker		50
TH	18	conversation	36
	19	conversation	4
	Total speaker		40
K	18	conversation	1
	19	conversation	33

APPENDICES

Speaker	Text No.	Genre of text	Number of predications
	Total speaker		34
AO	18	conversation	28
	19	conversation	2
	Total speaker		30
L	19	conservation	24
	Total speaker		24
anonymous 2	18	conversation	1
	19	conversation	22
	Total speaker		23
MCR	1	conversation	3
	21	personal narrative	2
	Total speaker		5
Assi	1	conversation	4
	Total speaker		4
anonymous 1	21	personal narrative	3
	Total speaker		3
Bouba	1	conversation	3
	Total speaker		3
Grand total			5806

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SAMENVATTING

In dit proefschrift wordt een systematische beschrijving gegeven van het morfosyntactisch gedragspatroon van circa 400 Jalonke werkwoorden. Het proefschrift is gebaseerd op veldwerk over Jalonke, een variant van Yalunka, dat een westelijke Mande-taal van de Niger-Congostam is. Jalonke wordt voornamelijk in geïsoleerde regio's in Guinea gesproken, maar ook in aangrenzende landen. Op basis van een analyse van onderscheidende morfosyntactische eigenschappen worden semantische componenten voorgesteld waarmee werkwoordklassen in de betreffende taal onderscheiden kunnen worden. Bovendien wordt in een kwantitatieve studie de overeenstemming tussen lexicale argumentstructuur en argumentrealisatie in discourse verkend.

In hoofdstuk 1 worden de taal en de sprekers ervan geïntroduceerd. De belangrijkste theoretische veronderstellingen betreffende de verschijnselen die in dit proefschrift aan de orde komen, worden voorgesteld en bediscussieerd. Verder wordt een illustratie gegeven van het type gegevens dat gebruikt is en de toegepaste methodes om deze te verzamelen en te analyseren.

In hoofdstuk 2 wordt een samenvatting gegeven van essentiële grammaticale kenmerken van deze nog niet eerder beschreven taal.

Hoofdstuk 3 tot en met 6 stellen de parameters vast die ten grondslag liggen aan de configuraties van de elementaire argumentstructuur van Jalonke werkwoorden. Dit leidt tot een verdeling in drie grote klassen werkwoorden, te weten basis-intransitieve, zuiver reflexieve en basis-transitieve werkwoorden. Voor elk van deze grote klassen worden verdere werkwoordsklassen volgens syntactisch relevante betekeniscomponenten voorgesteld. Er wordt gesteld dat basis-transitieve en basis-intransitieve werkwoorden worden onderscheiden door het type causatie dat wordt aangeduid door het werkwoord.

Hoofdstuk 3 staat in het teken van intransitieve werkwoorden. Intransitieve werkwoorden duiden gebeurtenissen aan die worden beschouwd als ‘intern veroorzaakt’ (Levin & Rappaport Hovav 1995) of als niet-veroorzaakt. Het causatietype van deze werkwoorden wordt weerspiegeld in het feit dat deze werkwoorden onmogelijk zinnen met twee argumenten kunnen betreden zonder dat ze formeel gekausativeerd worden.

In hoofdstuk 4 worden transitieve werkwoorden behandeld. Deze worden hoofdzakelijk geïnterpreteerd als ‘extern veroorzaakt’. Het gebruik van dergelijke werkwoorden in zinnen met een enkel argument leidt tot een passieve interpretatie.

In hoofdstuk 5 wordt een subgroep van de basis-transitieve werkwoorden onderzocht, namelijk de causatief/inchoatief alternerende werkwoorden. Deze werkwoorden kunnen zonder hun argument van externe oorzaak voorkomen en zijn in dat geval ambigu: zij kunnen dan zowel passief (causatieve alternant) als onveroorzaakt (inchoatieve alternant) gelezen worden.

Hoofdstuk 6 behandelt zuiver reflexieve werkwoorden. Deze werkwoorden vormen een tussenliggende klasse, omdat zij morfosyntactische eigenschappen delen met zowel intransitieve als transitieve werkwoorden. Op het gebied van de causatieve morfologie vertonen ze hetzelfde gedrag als de intransitieve werkwoorden, maar wat betreft het aantal syntactisch aanwezige argumenten komen ze overeen met de basis-transitieve werkwoorden.

In hoofdstuk 7 worden een aantal processen geïntroduceerd die een verandering teweegbrengen in de lexicale betekenis van een werkwoord (de niet uitgedrukte objectalternatie en de distributieve en iteratieve afleidingen) dan wel de valentie ervan (de passieve vorm en de causatieve afleiding). De eerstgenoemde processen worden beschreven als ‘morfolexicale operaties’ (Ackerman 1992), wat gebaseerd is op het feit dat zij noodzakelijkerwijs toegang hebben tot informatie die in de semantiek van het werkwoord aanwezig is en op hun beperkte productiviteit. De laatstgenoemde processen worden geanalyseerd als ‘morfosyntactische operaties’, omdat zij ongevoelig zijn voor de semantiek van een werkwoord, maar wel telkens van toepassing zijn wanneer wordt voldaan aan de formele condities die zich op het niveau van de argumentstructuur manifesteren. Dit reflecteert zich in hun hoge mate van productiviteit.

In hoofdstuk 8 wordt ingegaan op een splitsing onder intransitieve werkwoorden die te zien is wanneer genominaliseerde werkwoorden in bezittelijke constructies voorkomen. Het onderwerp van sommige intransitieve werkwoorden wordt

gerealiseerd als de bezitter van de ‘aliënabele’ bezittelijke constructie, terwijl het onderwerp van andere intransitieve werkwoorden als de bezitter van de ‘niet-aliënabele’ bezittelijke constructie wordt gerealiseerd. Het onderwerp van transitieve werkwoorden is altijd de bezitter in de aliënabele bezittelijke constructie, terwijl het lijdend voorwerp voorkomt in de niet-aliënabele bezittelijke constructie. Deze bevindingen duiden op een verklaring in termen van ‘niet-accusativiteit’: intransitieve werkwoorden die hun onderwerp op dezelfde manier realiseren als een transitief onderwerp zijn niet-ergatieve werkwoorden, terwijl intransitieve werkwoorden die hun onderwerp uitdrukken als een transitief lijdend voorwerp niet-accusatieve werkwoorden zijn. Hoewel deze splitsing synchroon gezien niet volledig gemotiveerd lijkt te zijn, is het toch plausibel om te stellen dat bij nominalisatie de thema-argumenten van alle *state-change*-werkwoorden (zowel transitieve als intransitieve) uitgedrukt werden als niet-aliënabele bezitters.

In tegenstelling tot de andere kernhoofdstukken wordt in hoofdstuk 9 de argumentstructuur niet vanuit een lexicaal perspectief, maar vanuit een discourse-perspectief bekeken. Op basis van een kwantitatieve studie van natuurlijke discourse wordt in dit hoofdstuk onderzocht hoe vaak sprekers alle argumenten van een gegeven werkwoordtype in discourse realiseren en hoe vaak verschillende types alternaties voorkomen. Vervolgens wordt onderzocht in welke mate argumentrealisatie uiteenloopt wat betreft genre, spreker en werkwoordstype. Er wordt aangetoond dat in het Jalonke de overeenstemming tussen lexicale argumentstructuur en argumentrealisatie in discourse veel groter is dan in het Engels. Verder worden in hoofdstuk 9 de verschillende discourse-genres en de frequenties van transitieve versus intransitieve types en tokens verkend, opnieuw rekening houdend met de variaties wat betreft de verschillende variabelen.

Hoofdstuk 10 bestaat uit een samenvatting en een uiteenzetting van de bijdrage van dit proefschrift voor de theoretische en descriptieve taalkunde. Hiernaast worden enkele vragen voor toekomstig onderzoek opgeworpen.

CURRICULUM VITAE

Friederike Lüpke studied African Linguistics, General Linguistics and Phonetics at the University of Köln (Germany) and Manding (Bambara) at the Institut National des Langues et Civilisations Orientales in Paris (France). In 1999, she received her MA in African Linguistics with first honors from the University of Köln. She was then offered a PhD scholarship at the Max Planck Institute for Psycholinguistics in Nijmegen (The Netherlands). In September 2003, she became a Research Fellow in the Endangered Languages Academic Programme of the Hans Rausing Endangered Languages Project (ELAP) at the School of Oriental and African Studies in London (UK). Currently, she is working as a Lecturer in Language Documentation and Description in ELAP.

